

# Contents

<b>Part I      Introduction</b>	
<b>1    The Baltic Sea Basin: Introduction . . . . .</b>	<b>3</b>
Jan Harff, Svante Björck, and Peer Hoth	
<b>Part II      Geological and Tectonical Evolution</b>	
<b>2    Geological Evolution and Resources of the Baltic Sea Area      from the Precambrian to the Quaternary . . . . .</b>	<b>13</b>
Saulius Šliaupa and Peer Hoth	
<b>3    Glacial Erosion/Sedimentation of the Baltic Region      and the Effect on the Postglacial Uplift . . . . .</b>	<b>53</b>
Aleksy Amantov, Willy Fjeldskaar, and Lawrence Cathles	
<b>Part III     The Basin Fill as a Climate and Sea Level Record</b>	
<b>4    The Development of the Baltic Sea Basin During      the Last 130 ka . . . . .</b>	<b>75</b>
Thomas Andrén, Svante Björck, Elinor Andrén, Daniel Conley, Lovisa Zillén, and Johanna Anjar	
<b>5    Late Quaternary Climate Variations Reflected      in Baltic Sea Sediments . . . . .</b>	<b>99</b>
Jan Harff, Rudolf Endler, Emel Emelyanov, Sergey Kotov, Thomas Leipe, Matthias Moros, Ricardo Olea, Michal Tomczak, and Andrzej Witkowski	
<b>6    Geological Structure of the Quaternary Sedimentary      Sequence in the Klaipėda Strait, Southeastern Baltic . . . . .</b>	<b>133</b>
Albertas Bitinas, Aldona Damušytė, and Anatoly Molodkov	

## **Part IV      Coastline Changes**

- 7 **Coastlines of the Baltic Sea – Zones of Competition  
Between Geological Processes and a Changing Climate:  
Examples from the Southern Baltic . . . . .** 149  
Jan Harff and Michael Meyer
- 8 **Palaeogeographic Model for the SW Estonian Coastal Zone  
of the Baltic Sea . . . . .** 165  
Alar Rosentau, Siim Veski, Aivar Kriiska, Raivo Aunap,  
Jüri Vassiljev, Leili Saarse, Tiit Hang, Atko Heinsalu,  
and Tõnis Oja
- 9 **Palaeoreconstruction of the Baltic Ice Lake in the Eastern Baltic . . .** 189  
Jüri Vassiljev, Leili Saarse, and Alar Rosentau
- 10 **Submerged Holocene Wave-Cut Cliffs in the South-eastern  
Part of the Baltic Sea: Reinterpretation Based on Recent  
Bathymetrical Data . . . . .** 203  
Vadim Sivkov, Dmitry Dorokhov, and Marina Ulyanova
- 11 **Drowned Forests in the Gulf of Gdańsk (Southern Baltic)  
as an Indicator of the Holocene Shoreline Changes . . . . .** 219  
Szymon Uścińowicz, Grażyna Miotk-Szpiganowicz,  
Marek Krąpiec, Małgorzata Witak, Jan Harff, Harald Lübke,  
and Franz Tauber
- 12 **Holocene Evolution of the Southern Baltic Sea Coast and  
Interplay of Sea-Level Variation, Isostasy, Accommodation  
and Sediment Supply . . . . .** 233  
Reinhard Lampe, Michael Naumann, Hinrich Meyer,  
Wolfgang Janke, and Regine Ziekur

## **Part V      Sediment Dynamics**

- 13 **On the Dynamics of “Almost Equilibrium” Beaches  
in Semi-sheltered Bays Along the Southern Coast of the Gulf  
of Finland . . . . .** 255  
Tarmo Soomere and Terry Healy
- 14 **Modelling Coastline Change of the Darss-Zingst Peninsula  
with Sedsim . . . . .** 281  
Michael Meyer, Jan Harff, and Chris Dyt

## **Part VI      Interactions Between a Changing Environment and Society**

- 15 **Settlement Development in the Shadow of Coastal  
Changes – Case Studies from the Baltic Rim . . . . .** 301  
Hauke Jöns

<b>16</b>	<b>Geological Hazard Potential at the Baltic Sea and Its Coastal Zone: Examples from the Eastern Gulf of Finland and the Kaliningrad Area . . . . .</b>	<b>337</b>
	Mikhail Spiridonov, Daria Ryabchuk, Vladimir Zhamoida, Alexandr Sergeev, Vadim Sivkov, and Vadim Boldyrev	
<b>17</b>	<b>Seafloor Desertification – A Future Scenario for the Gulf of Finland? . . . . .</b>	<b>365</b>
	Henry Vallius, Vladimir Zhamoida, Aarno Kotilainen, and Daria Ryabchuk	
<b>18</b>	<b>Sources, Dynamics and Management of Phosphorus in a Southern Baltic Estuary . . . . .</b>	<b>373</b>
	Gerald Schernewski, Thomas Neumann, and Horst Behrendt	
<b>Part VII Hydrogeological Modeling</b>		
<b>19</b>	<b>Potential Change in Groundwater Discharge as Response to Varying Climatic Conditions – An Experimental Model Study at Catchment Scale . . . . .</b>	<b>391</b>
	Maria-Theresia Schafmeister and Andreas Darsow	
<b>Part VIII Monitoring</b>		
<b>20</b>	<b>Monitoring the Bio-optical State of the Baltic Sea Ecosystem with Remote Sensing and Autonomous In Situ Techniques . . . . .</b>	<b>407</b>
	Susanne Kratzer, Kerstin Ebert, and Kai Sørensen	
<b>Index</b>	<b>. . . . .</b>	<b>437</b>