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Post-Glacial Mass Flow and Associated Deposits Preserved in Palaeovalleys: the Late Precambrian Moraeneso Formation, North Greenland
Submarine Geomorphology

BYRON SHANNON

Landscapes and Landforms of Eastern Canada Elsevier
The challenges facing submarine mass movement researchers and engineers are plentiful and exciting. This book follows several high-profile submarine landslide disasters that have reached the world's attention over the past few years. For decades, researchers have been mapping the world's mass movements. Their significant impacts on the Earth by distributing sediment on phenomenal scales is undeniable. Their importance in the origins of buried resources has long been understood. Their hazard potential ranges from damaging to apocalyptic, frequently damaging local infrastructure and sometimes devastating whole coastlines. Moving beyond mapping advances, the subaqueous mass movement scientists and practitioners are now also focussed on assessing the consequences of mass movements, and the measurement and modelling of events, hazard analysis and mitigation. Many state-of-the-art examples are provided in this book, which is produced under the auspices of the United Nations Educational, Scientific and Cultural Organisation Program S4SLIDE (Significance of Modern and Ancient Submarine Slope LandSLIDEs).
Earth's Glacial Record Newnes
Glacier Science and Environmental Change is an authoritative and comprehensive reference work on contemporary issues in glaciology. It explores the interface between glacier science and environmental change, in the past, present, and future. Written by the world's foremost authorities in the subject and researchers at the scientific frontier where conventional wisdom of approach comes face to face with unsolved problems, this book provides: state-of-the-art reviews of the key topics in glaciology and related disciplines in environmental change cutting-edge case studies of the latest research an interdisciplinary synthesis of the issues that draw together the research efforts of glaciologists and scientists from other areas such as geologists, hydrologists, and climatologists color-plate section (with selected extra figures provided in color at www.blackwellpublishing.com/knight). The topics in this book have been carefully chosen to reflect current priorities in research, the interdisciplinary nature of the subject, and the developing relationship between glaciology and studies of environmental change. Glacier Science and Environmental Change is essential reading for advanced undergraduates, postgraduate research students, and professional researchers in glaciology, geology, geography, geophysics, climatology, and related disciplines.
The West Antarctic Ice Sheet Museum Tusculanum Press
"Glaciogenic reservoirs and hydrocarbon systems occur intermittently throughout the stratigraphic record, with particular prominence in Neoproterozoic, Late Ordovician, Permo-Carboniferous and Late Cenozoic strata. Recent interest in glaciogenic successions has been fuelled by hydrocarbon discoveries in ancient glaciogenic reservoirs in North Africa, the Middle East, Australia and South America. Glaciogenic deposits of Pleistocene age are noteworthy for their content of groundwater onshore and potentially prospective and/or hazardous gas accumulations offshore. The abundant imprints of Pleistocene glaciations in both hemispheres can be used to reconstruct complex histories of repeated ice cover and retreat, and glacier-bed interactions, thus informing our view on the dynamics of older ice caps and predictions of future glaciations. This volume aims to provide a better understanding of glaciogenic processes, their stratigraphic record and reservoir characteristics of glaciogenic deposits. The book comprises 3 overview papers and 16 original case studies of Neoproterozoic to Pleistocene successions on 6 continents and will be of interest to sedimentologists, glaciologists, geophysicists, hydrologists and petroleum geologists alike."-- P. 4 of cover.
Reconstructing Quaternary Environments CRC Press
The archipelagic kingdoms of Man and the Isles that flourished from the last quarter of the eleventh century down to the middle of the thirteenth century represent two forgotten kingdoms of the medieval British Isles. They were ruled by powerful individuals, with unquestionably regnal status, who interacted in a variety of ways with rulers of surrounding lands and who left their footprint on a wide range of written documents and upon the very landscapes and seascapes of the islands they ruled. Yet British history has tended to overlook these Late Norse maritime empires, which thrived for two centuries on the Atlantic frontiers of Britain. This book represents the first ever overview of both Manx and Hebridean dynasties that dominated Man and the Isles from the late eleventh to the mid-thirteenth centuries. Coverage is broad and is not restricted to politics and warfare. An introductory chapter examines the maritime context of the kingdoms in light of recent work in the field of maritime history, while subsequent chronological and narrative chapters trace the history of the kingdoms from their origins through their maturity to their demise in the thirteenth century. Separate chapters examine the economy and society, church and religion, power and architecture.
Landscapes and Landforms of the Central Sahara U of Minnesota Press
One of Springer's Major Reference Works, this book gives the reader a truly global perspective. It is the first major reference work in its field. Paleoclimate topics covered in the encyclopedia give the reader the capability to place the observations of recent global warming in the context of longer-term natural climate fluctuations. Significant elements of the encyclopedia include recent developments in paleoclimate modeling, paleo-ocean circulation, as well as the influence of geological processes and biological feedbacks on global climate change. The encyclopedia gives the reader an entry point into the literature on these and many other groundbreaking topics.
Glaciated Continental Margins Springer
This critical book focuses on the geomorphological landscapes of eastern Canada and provides a companion volume to "Landscapes and Landforms of Western Canada" (2017). There are a number of unique characteristics of eastern Canada's landscapes, notably its magnificent coastlines, the extraordinary variety and extent of wetlands, the huge Great Lakes-St. Lawrence basin, the high incidence of meteorite craters, the spectacular Niagara Falls, urban karst in Montreal and Ottawa, youthful, glaciated karst in Ontario, Newfoundland, Quebec and Nova Scotia, the ubiquitous

permafrost terrain of Nunavut, Labrador and northern Quebec and the magnificent arctic fjords and glaciers. Looking at coastlines, the tidal extremes of the Bay of Fundy are world renowned; the structural complexity of the island of Newfoundland is less well known, but produces an astounding variety of coastlines in close succession; the arctic fjordlands of Baffin and Ellesmere islands and the extravagant raised beaches of Hudson Bay bear comparison with the classic fjords of Norway and the Baltic Sea raised beaches. As for wetlands, there are distinctive Arctic, Subarctic, Boreal, Eastern Temperate and Atlantic wetlands, and their extent is second only to those of Russia. In the Hudson and James Bay regions, between 75-100% of the terrestrial surface is comprised of wetlands. One of North America's largest river basins, the Great Lakes-St. Lawrence basin, has its source in Minnesota, straddles the USA-Canada border and debouches into Quebec as the St. Lawrence River and evolves through its estuary into the Gulf of St. Lawrence, a journey of almost 5,000 km. As far as meteorite craters are concerned, 10% of the world's total are located in eastern Canada, including some of the largest and most complex landforms. They are preserved preferentially in the ancient Shield terrain of Quebec. Finally, the three million km2 of permafrost controlled relief in eastern Canada serves as a reminder of the vulnerability of eastern Canada's landscapes to climate change. Effects of warming are expressed through thawing of the permafrost, disruption of transportation corridors and urban construction problems, ever-present geomorphic hazards.

Glaciogenic Reservoirs and Hydrocarbon Systems Elsevier

This book, based on the proceedings of third symposium held on 17th August 1977 during the Xth INQUA Congress at Birmingham, UK, focuses on the influence the Antarctic glaciation had on world palaeoenvironments.

Blue Carbon: Beyond the Inventory CRC Press

This book on the current state of knowledge of submarine geomorphology aims to achieve the goals of the Submarine Geomorphology working group, set up in 2013, by establishing submarine geomorphology as a field of research, disseminating its concepts and techniques among earth scientists and professionals, and encouraging students to develop their skills and knowledge in this field. Editors have invited 30 experts from around the world to contribute chapters to this book, which is divided into 4 sections – (i) Introduction & history, (ii) Data & methods, (ii) Submarine landforms & processes and (iv) Conclusions & future directions. Each chapter provides a review of a topic, establishes the state-of-the-art, identifies the key research questions that need to be addressed, and delineates a strategy on how to achieve this. Submarine geomorphology is a priority for many research institutions, government authorities and industries globally. The book is useful for undergraduate and graduate students, and professionals with limited training in this field.

Oceanography and Benthic Ecology of Patagonian Fjords - 500 years From the Discovery of the Strait Magellan Museum Tusculanum Press

European Glacial Landscapes: The Holocene presents the current state of knowledge on glacial landscapes of Europe and nearby areas over the Holocene to deduce the influence of atmospheric and oceanic currents and the insolation forcing variability and volcanic activity on Holocene paleoclimates, the existence of asynchronies in the timing of occurrence of glacier expansion and shrinkage during the Holocene, time lags between the identification of oceanic and atmospheric changes and those occurring in glacial extension during the Holocene, the role of Holocene glaciers on the climate of Europe, and on sea level variability, and the delimitation of landscapes that need special protection. Students, academics and researchers in Geography, Geology, Environmental Sciences, Physics and Earth Science departments will find this book provides novel findings of all the major European Regions in a single publication, with updated information about Holocene glacial geomorphology and paleo-climatology and clear figures that model the landscapes covered. Provides a synthesis and summary of glacial processes in Europe over the Holocene period Features research from experts in palaeo-climatology, palaeo-oceanography and palaeo-glaciology Includes access to a companion website with an interactive map, photos of glacial features, and geospatial data related to European Glacial Landscapes

Late Quaternary Environments of the Soviet Union Geological Society of America

This volume examines the processes responsible for sedimentation in modern glaciomarine environments, and how such modern studies can be used as analogues in the interpretation of ancient glaciomarine sequences. Sediments released from glaciers grounded in tidewater, floating ice shelves, ice tongues, icebergs and sea ice form complex sequences governed by glaciological, oceanographic, sedimentary and biogenic controls. Ten per cent of the world's oceans and epicontinental seas contain such active glacimarine environments, but during Cenozoic glacial periods this area was doubled. This book will, therefore, be of relevance to all scientists concerned with high and middle latitude marine environments. The early chapters are concerned largely with processes of sedimentation in modern glacimarine environments; examples are drawn from Alaska, the Canadian Arctic, Svalbard and Antarctica. Studies of ancient sequences, both Cenozoic and pre-Cenozoic, from the Barents Sea, Greenland, Sweden, Alaska and the northwest European continental shelf, form the latter part of the book.

Glacier-influenced Sedimentation on High-latitude Continental Margins Birlinn Ltd

This volume represents the proceedings from a colloquium held in West Germany in 1980 on late and postglacial oscillations of glaciers. The main texts are in German (13), English (8) and French (5) but all have abstracts in the three languages and all the figure captions are similarly translated.

Encyclopedia of Quaternary Science Geological Society of London

The volume highlights developments in our understanding of the palaeogeographical, palaeobiological, palaeoclimatic and cryospheric evolution of Antarctica. It focuses on the sedimentary record from the Devonian to the Quaternary Period. It features tectonic evolution and stratigraphy, as well as processes taking place adjacent to, beneath and beyond the ice-sheet margin, including the continental shelf. The contributions in this volume include several invited review papers, as well as original research papers arising from the International Symposium on Antarctic Earth Sciences in Edinburgh, in July 2011. These papers demonstrate a remarkable diversity of Earth science interests in the Antarctic. Following international trends, there is particular emphasis on the Cenozoic Era, reflecting the increasing emphasis on the documentation and understanding of the past record of ice-sheet fluctuations. Furthermore, Antarctic Earth history is providing us with important information about potential future trends, as the impact of global warming is increasingly felt on the continent and its ocean.

Ice-marginal and Periglacial Processes and Sediments MDPI

Geomorphometry is the science of quantitative terrain characterization and analysis, and has

traditionally focused on the investigation of terrestrial and planetary landscapes. However, applications of marine geomorphometry have now moved beyond the simple adoption of techniques developed for terrestrial studies, driven by the rise in the acquisition of high-resolution seafloor data and by the availability of user-friendly spatial analytical tools. Considering that the seafloor represents 71% of the surface of our planet, this is an important step towards understanding the Earth in its entirety. This volume is the first one dedicated to marine applications of geomorphometry. It showcases studies addressing the five steps of geomorphometry: sampling a surface (e.g., the seafloor), generating a Digital Terrain Model (DTM) from samples, preprocessing the DTM for subsequent analyses (e.g., correcting for errors and artifacts), deriving terrain attributes and/or extracting terrain features from the DTM, and using and explaining those terrain attributes and features in a given context. Throughout these studies, authors address a range of challenges and issues associated with applying geomorphometric techniques to the complex marine environment, including issues related to spatial scale, data quality, and linking seafloor topography with physical, geological, biological, and ecological processes. As marine geomorphometry becomes increasingly recognized as a sub-discipline of geomorphometry, this volume brings together a collection of research articles that reflect the types of studies that are helping to chart the course for the future of marine geomorphometry.

Past Glacial Environments Geological Society of London

This GSL volume focuses on underwater or subaqueous landslides with the overarching goal of understanding how they affect society and the environment. The new research presented here is the result of significant advances made over recent years in directly monitoring submarine landslides, in standardising global datasets for quantitative analysis, constructing a global database, and leading international research projects. This volume demonstrates the breadth of investigation taking place into subaqueous landslides, and shows that while events like the recent ones in the Indonesian archipelago can be devastating they are at the smaller end of what the Earth has experienced in the past. Understanding the spectrum of subaqueous landslide processes, and therefore the potential societal impact, requires research across all spatial and temporal scales. This volume delivers a compilation of state-of-the-art papers covering topics from regional landslide databases to advanced techniques for in situ measurements, to numerical modelling of processes and hazards.

European Glacial Landscapes Geological Society of London

The new Second Edition of Glacial Geology provides a modern, comprehensive summary of glacial geology and geomorphology. It is has been thoroughly revised and updated from the original First Edition. This book will appeal to all students interested in the landforms and sediments that make up glacial landscapes. The aim of the book is to outline glacial landforms and sediments and to provide the reader with the tools required to interpret glacial landscapes. It describes how glaciers work and how the processes of glacial erosion and deposition which operate within them are recorded in the glacial landscape. The Second Edition is presented in the same clear and concise format as the First Edition, providing detailed explanations that are not cluttered with unnecessary detail. Additions include a new chapter on Glaciations around the Globe, demonstrating the range of glacial environments present on Earth today and a new chapter on Palaeoglaciology, explaining how glacial landforms and sediments are used in ice-sheet reconstructions. Like the original book, text boxes are used throughout to explain key concepts and to introduce students to case study material from the glacial literature. Newly updated sections on Further Reading are also included at the end of each chapter to point the reader towards key references. The book is illustrated throughout with colour photographs and illustrations.

Glaciated Margins Frontiers Media SA

This book discusses glacial or glacially-controlled sequences as markers of the Earth's geodynamic and climatic history.

Glacial Geology Geological Society of London

An examination of ancient and contemporary submarine landslides and their impact Landslides are common in every subaqueous geodynamic context, from passive and active continental margins to oceanic and continental intraplate settings. They pose significant threats to both offshore and coastal areas due to their frequency, dimensions, and terminal velocity, capacity to travel great distances, and ability to generate potentially destructive tsunamis. Submarine Landslides: Subaqueous Mass Transport Deposits from Outcrops to Seismic Profiles examines the mechanisms, characteristics, and impacts of submarine landslides. Volume highlights include: Use of different methodological approaches, from geophysics to field-based geology Data on submarine landslide deposits at various scales Worldwide collection of case studies from on- and off-shore Potential risks to human society and infrastructure Impacts on the hydrosphere, atmosphere, and lithosphere

Sediment Routing Systems Geological Society of London

Late Cenozoic glaciation directly affected sedimentation on more than half the Earth's continental shelves. Ice continues to be a dominant influence on sedimentation around Greenland and Antarctica, and on the shelves facing the Arctic Ocean. The features of these shelves include true glacimarine features, i.e. those found in a marine environment in proximityto, or strongly under the influence of, ice, such as iceberg scours and pits, ice gouges and incisions, subglacial outwash deposits, and diamictons resulting from ice rafting. Also seen, because large areas of the shelves were exposed during the Pleistocene lowering of sea level, are terrestrial glacial and periglacial features, e.g. fluvial outwash valleys and associated deposits, tunnel valleys, drumlin fields and lodgement till, which have subsequently been submerged and modified by marine influences. Glaciated Continental Margins: An Atlas of Acoustic Images illustrates the complexity of features found in glaciated and formerly glaciated marine environments. The volume was assembled by an international Editorial Committee, led by Thomas A. Davies (University of Texas), from records gathered in the course of recent research and contributed by members of the scientific community from around the world. These include seismic sections, side-scan maps, and 3-D seismic data, supplemented in some cases by bottom photographs and core data, with accompanying text. The work is scientists at 40 institutions in 10 countries is represented. This book will be an invaluable resource for students, Quaternary scientists, glaciologists, marine geologists and geophysicists, geotechnical engineers, and surveyors teachers working in universities, research institutions and government agencies with interests in polar and subpolar regions, as well as those in industries with offshore interests.

Glacimarine Environments American Geophysical Union

Understanding the sedimentary and geophysical archive of glaciated margins is a complex task that

requires integration and analysis of disparate sedimentological and geophysical data. Their analysis is vital for understanding the dynamics of past ice sheets and how they interact with their neighbouring marine basins, on timescales that cannot be captured by observations of the cryosphere today. As resources, sediments deposited on the inner margins of glaciated shelves also exhibit resource potential where more sand-dominated systems occur, acting as reservoirs for both hydrocarbons and water. This book surveys the full gamut of glaciated margins, from deep time (Neoproterozoic, Ordovician and Carboniferous–Permian) to modern high-latitude margins in Canada and Antarctica. This collection of papers is the first attempt to deliberately do this, allowing not only the similarities and differences between modern and ancient glaciated margins to be explored, but also the wide spectrum of their mechanisms of investigation to be probed. Together, these papers offer a high-resolution, spatially and temporally diverse blueprint of the depositional processes, ice sheet dynamics, and basin architectures of the world's former glaciated margins; a vital resource in advancing understanding of our present and future marine-terminating ice sheet margins.
Glacier Science and Environmental Change John Wiley & Sons

This third edition of Reconstructing Quaternary Environments has been completely revised and updated to provide a new account of the history and scale of environmental changes during the Quaternary. The evidence is extremely diverse ranging from landforms and sediments to fossil assemblages and geochemical data, and includes new data from terrestrial, marine and ice-core records. Dating methods are described and evaluated, while the principles and practices of Quaternary stratigraphy are also discussed. The volume concludes with a new chapter which considers some of the key questions about the nature, causes and consequences of global climatic and environmental change over a range of temporal scales. This synthesis builds on the methods and approaches described earlier in the book to show how a number of exciting ideas that have emerged over the last two decades are providing new insights into the operation of the global earth-ocean-atmosphere system, and are now central to many areas of contemporary Quaternary research. This comprehensive and dynamic textbook is richly illustrated throughout with full-colour figures and photographs. The book will be of interest to undergraduates, postgraduates and professionals in Earth Science, Environmental Science, Physical Geography, Geology, Botany, Zoology, Ecology, Archaeology and Anthropology

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