

# Quaternary Palaeoecology

H. J. B. Birks and Hilary H. Birks



# Quaternary Paleoecology

**Harry John Betteley Birks, Hilary H.  
Birks**



## **Quaternary Paleoecology:**

**Quaternary Paleoecology** International Association for Quaternary Research, 1967 Articles by 29 authors from 10 countries ranging from the statistical to geochemical approach to Quaternary environmental history Covers Quaternary pollen analysis *Quaternary Paleoecology* International Association for Quaternary Research. Congress, 1982

**Quaternary Palaeoecology** Harry John Betteley Birks, Hilary H. Birks, 1980 **Methods in Paleoecology** Darin A. Croft, Denise F. Su, Scott W. Simpson, 2018-10-27 This volume focuses on the reconstruction of past ecosystems and provides a comprehensive review of current techniques and their application in exemplar studies The 18 chapters address a wide variety of topics that span vertebrate paleobiology and paleoecology body mass postcranial functional morphology evolutionary dental morphology microwear and mesowear ecomorphology mammal community structure analysis contextual paleoenvironmental studies paleosols and sedimentology ichnofossils pollen phytoliths plant macrofossils and special techniques bone microstructure biomineral isotopes inorganic isotopes 3 D morphometrics and ecometric modeling A final chapter discusses how to integrate results of these studies with taphonomic data in order to more accurately characterize an ancient ecosystem Current investigators advanced undergraduates and graduate students interested in the field of paleoecology will find this book immensely useful The length and structure of the volume also makes it suitable for teaching a college level course on reconstructing Cenozoic ecosystems **Quaternary paleoecology** Edward John Cushing, Herbert E. Wright, Library of Congress Subject Headings Library of Congress, Library of Congress. Subject Cataloging Division, Library of Congress. Office for Subject Cataloging Policy, 2013 **Library of Congress Subject Headings** Library of Congress. Cataloging Policy and Support Office, 2009 **Quaternary Ecology** , 2012-11-26 **Quaternary Ecology** Hazel R. Delcourt, P. Delcourt, 1991-07-31 The increasing interest during recent years in vegetation history long term climatic changes and the development of biotic communities has resulted in a growth of the literature in this field and has provided an incentive for scientists to use palaeo ecology concepts to clarify contemporary ecological issues Quaternary ecology offers the perspective of time in using natural experiments of the past to evaluate the responses of population communities and ecosystems to climatic and environmental changes on a time scale extending back over the past two million years of the quaternary period Examples from the palaeo ecological literature demonstrate how quaternary ecology interfaces with other branches of ecology including plant demography ecological genetics limnology and landscape ecology **Encyclopedia of Ecology** Brian D. Fath, 2014-11-03 The groundbreaking Encyclopedia of Ecology provides an authoritative and comprehensive coverage of the complete field of ecology from general to applied It includes over 500 detailed entries structured to provide the user with complete coverage of the core knowledge accessed as intuitively as possible and heavily cross referenced Written by an international team of leading experts this revolutionary encyclopedia will serve as a one stop shop to concise stand alone articles to be used as a point of entry for undergraduate students or as a tool for active

researchers looking for the latest information in the field Entries cover a range of topics including Behavioral Ecology Ecological Processes Ecological Modeling Ecological Engineering Ecological Indicators Ecological Informatics Ecosystems Ecotoxicology Evolutionary Ecology General Ecology Global Ecology Human Ecology System Ecology The first reference work to cover all aspects of ecology from basic to applied Over 500 concise stand alone articles are written by prominent leaders in the field Article text is supported by full color photos drawings tables and other visual material Fully indexed and cross referenced with detailed references for further study Writing level is suited to both the expert and non expert Available electronically on ScienceDirect shortly upon publication

*Untangling the Quaternary Period* Richard B. Waite, Glenn D. Thackray, Alan R. Gillespie, 2021-04-20 This volume brings together nineteen papers of interdisciplinary Quaternary science honoring Stephen Porter Special Paper 548 features papers from six continents on wide ranging topics including glaciation paleoecology landscape evolution megafloods and loess The topical and geographical range of the papers as well as their interdisciplinary nature honor Porter's distinct approach to Quaternary science and leadership that influence the field to this day

**Paleontology in Ecology and Conservation** Julien Louys, 2012-04-25 The fossil record contains unique long term insights into how ecosystems form and function which cannot be determined simply by examining modern systems It also provides a record of endangered species through time which allow us to make conservation decisions based on thousands to millions of years of information The aim of this book is to demonstrate how palaeontological data has been or could be incorporated into ecological or conservation scientific studies This book will be written by palaeontologists for modern ecologists and conservation scientists Manuscripts will fall into one or a combination of four broad categories case studies review articles practical considerations and future directions This book will serve as both a how to guide and provide the current state of knowledge for this type of research It will highlight the unique and critical insights that can be gained by the inclusion of palaeontological data into modern ecological or conservation studies

Quaternary Ecology, Evolution, and Biogeography Valentí Rull, 2020-03-05 Quaternary Ecology Evolution and Biogeography offers an introduction to the study of the ecological and evolutionary processes that have shaped our present biosphere under the influence of glacial interglacial cycles Written by an ecologist with paleoecological expertise this book reviews the climatic changes that have occurred during the last 2.6 million years along with the responses of organisms and ecosystems It offers an understanding of the evolutionary origin of extant biodiversity its biogeographical patterns and the composition of modern ecological communities In addition it explores human evolution and the influence of our activities on the biosphere especially in the last millennia This book offers the latest information on how studying the past can contribute to our understanding of present climate issues for a better future and is an ideal resource for researchers and students in the natural sciences Includes the latest developments in genomics and their relevance within Quaternary evolution Offers a holistic view of the origin of biodiversity patterns and community assembly Discusses the role of climate on human evolution and the ecological consequences for

natural systems      Prehistoric Native Americans and Ecological Change Paul A. Delcourt, Hazel R. Delcourt, 2004-07-29 This book shows that Holocene human ecosystems are complex adaptive systems in which humans interacted with their environment in a nested series of spatial and temporal scales Using panarchy theory it integrates paleoecological and archaeological research from the Eastern Woodlands of North America providing a paradigm to help resolve long standing disagreements between ecologists and archaeologists about the importance of prehistoric Native Americans as agents for ecological change The authors present the concept of a panarchy of complex adaptive cycles as applied to the development of increasingly complex human ecosystems through time They explore examples of ecological interactions at the level of gene population community landscape and regional hierarchical scales emphasizing the ecological pattern and process involving the development of human ecosystems Finally they offer a perspective on the implications of the legacy of Native Americans as agents of change for conservation and ecological restoration efforts today      *Climate Change* Frank Chambers, Michael Ogle, 2002 This collection of papers is introduced by an overview of research into climate change Each volume contains an introductory commentary presenting the major strengths and achievements of the papers their weaknesses and limitations and points to follow up work      Ice Age Southern Andes C.J. Heusser, 2003-11-12 The Southern Andes stretching from the subtropics to the subantarctic are ideally located for palaeoenvironmental research Over the broad and continuous latitudinal extent of the cordillera 24 vegetation is adjusted to climatic gradients and atmospheric circulation patterns Opposed to the prevailing Southern Westerlies the Southern Andes are positioned to receive the brunt of the winds while biota are set to record the shifting of incoming storm systems over time Sequential latitudinally placed sedimentary deposits containing microfossils and macroremains as archives of past vegetation and climate make possible the detection of equatorward and poleward displacement of plant communities and as a consequence changes in climatic controls No terrestrial setting in the Southern Hemisphere is so unique for palaeoenvironmental reconstruction during and since the last ice age Twenty radiocarbon dated fossil pollen and spore records chosen to place emphasis on the last ice age include high resolution submillennial data sets that also cover the Holocene thus providing contrast between present interglacial and past glacial ages From a refined data base the records constitute the foundation for interpreting factors responsible for vegetation change over 50 000 14C years glacial interglacial migration and refugial patterns for a diversity of taxa and the extent of intrahemispheric and polar hemispheric synchronicity versus asynchronicity      The Geological Record of Ecological Dynamics National Research Council, Division on Earth and Life Studies, Board on Life Sciences, Board on Earth Sciences and Resources, Committee on the Geologic Record of Biosphere Dynamics, 2005-02-13 In order to answer important questions about ecosystems and biodiversity scientists can look to the past geological record which includes fossils sediment and ice cores and tree rings Because of recent advances in earth scientists ability to analyze biological and environmental information from geological data the National Science Foundation and the U S Geological Survey asked a National Research

Council NRC committee to assess the scientific opportunities provided by the geologic record and recommend how scientists can take advantage of these opportunities for the nation's benefit. The committee identified three initiatives for future research to be developed over the next decade: 1. use the geological record as a natural laboratory to explore changes in living things under a range of past conditions; 2. use the record to better predict the response of biological systems to climate change; and 3. use geologic information to evaluate the effects of human and non-human factors on ecosystems. The committee also offered suggestions for improving the field through better training, improved databases, and additional funding.

Juneau Icefield Research Project (1949-1958) Cal Heusser, 2007-04-17. The Juneau Icefield Research Project (JIRP) was formed to find a prototype area to study Alaska's coastal glaciers and trends in climatic change. For the past 57 years, JIRP has conducted a systematic study of key retreating and advancing glaciers, including Lemon Creek and Taku Glaciers. From this study, a model has been developed to study the mass balance of these glaciers and their relation to general atmospheric circulation. Taku's mass balance was expected to provide a meaningful assessment of glacial climate relations and environmental trends, specifically the increase in atmospheric trace element pollution and global warming. Juneau Icefield Research Project 1949-1958 is represented by 15 chapters organized in four parts: Background of the Project, Early Years of the Project (1949-1952), Later Years of the Project (1953-1958), and Summation and Epilogue. After describing the Project's background, Chapters 3 through 12 cover year-by-year activities, personnel, logistics, and research of the Taku and Lemon Creek Glaciers. These chapters included day-to-day journal entries that represent a record of the informal itineraries covering the course of the study. Chapters 13 and 14 summarize glaciological findings on Taku Glacier and the status of hydrological budgets on Lemon Creek Glacier through the International Geophysical Year 1957-1965. The final chapter of the text is an overview of paleoecological work by the Project in North Pacific America, brought into the context of modern research with the recognition of glacier climate cycles. Documents the study Juneau Icefield Research Project on a year-by-year account, covering activities, personnel, logistics, and research. Discusses the model developed from the JIRP and explains its importance in predicting future climate changes. Presents the information with day-to-day journal entries, making the text attractive and easy to read.

*Global Climates since the Last Glacial Maximum* H. E. Wright, 1993. Traces the evolution of the global climate since the last period of glacial maximum, approximately 18,000 years ago. Examines how changes in climate have transformed Earth's biomes in this period and how this change has influenced the evolution of life.

**Late Cretaceous and Cenozoic History of North American Vegetation** Alan Graham, 1999-03-25. This book is a unique and integrated account of the history of North American vegetation and paleoenvironments over the past 70 million years. It includes discussions of the modern plant communities, causal factors for environmental change, biotic response, and methodologies. The history reveals a North American vegetation that is vast, immensely complex, and dynamic.

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