

## Netherlands Journal of Geosciences — Geologie en Mijnbouw

Netherlands Journal of Geosciences / Geologie en Mijnbouw (ISSN 0016-7746) is an international journal published by the 'Netherlands Journal of Geosciences' Foundation on behalf of the Royal Geological and Mining Society of the Netherlands (KNGMG) and TNO Built Environment and Geosciences, *Geological Survey of the Netherlands*. It is the successor of the international journals of both the KNGMG (Geologie en Mijnbouw) and TNO-NITG (Mededelingen Nederlands Instituut voor Toegepaste Geowetenschappen TNO).

### Address

Editorial Office Netherlands Journal of Geosciences / Geologie en Mijnbouw  
P.O. Box 80015, 3508 TA Utrecht, the Netherlands  
tel. +31 (0)30 256 44 70; fax. +31 (0)30 256 44 75; email: njg@nitg.tno.nl

### Editorial Board

Th. E. Wong (Editor-in-chief), TNO Built Environment and Geosciences, *Geological Survey of the Netherlands*, P.O. Box 80015, 3508 TA Utrecht, the Netherlands  
W.Z. Hoek, Faculty of Geosciences, Department of Physical Geography, Utrecht University, Heidelberglaan 2, 3508 TC Utrecht, the Netherlands  
C. Kasse, Faculty of Earth and Life Sciences, Vrije Universiteit, De Boelelaan 1085, 1081 HV Amsterdam, the Netherlands  
G.J. Weltje, Department of Applied Earth Sciences, Delft University of Technology, Mijnbouwstraat 120, 2628 RX Delft, the Netherlands  
C.J. van der Zwan, SIEP-RTS, P.O. Box 60, 2280 AB, Rijswijk, the Netherlands  
Jos Rietstap Vormgeving (Technical editor), Louise de Colignystraat 21, 3116 EG Schiedam, the Netherlands

### Advisory editors

O.A. Abbink, TNO, P.O. Box 80015, 3508 TA Utrecht, the Netherlands (general stratigraphy, biostratigraphy (palynology), Paleozoic – Mesozoic terrestrial systems)  
H. Brinkhuis, Laboratory of Palaeobotany and Palynology, Utrecht University, Budapestlaan 4, 3584 CD Utrecht, the Netherlands (palynology)  
M.C. Geluk, Nederlandse Aardolie Maatschappij, Schepermaat 2, 9405 TA Assen, the Netherlands  
G. de Lange, Department of Geochemistry, Utrecht University, Budapestlaan 4, 3584 CD Utrecht, the Netherlands (geochemistry)  
M.E. Donselaar, Department of Applied Earth Sciences, Delft University of Technology, Mijnbouwstraat 120, 2628 RX Delft, the Netherlands (sedimentology)  
A.R. Fortuin, Faculty of Earth and Life Sciences, Vrije Universiteit, De Boelelaan 1085, 1081 HV Amsterdam, the Netherlands (stratigraphy, sedimentology)  
P. Gerling, Department of Geochemistry, BGR, Stilleweg 2, 30655 Hannover, Germany (organic geochemistry, regional geology of Germany)  
Ph. Gibbard, Quaternary Stratigraphy Group, Godwin Institute of Quaternary research, Department of Geography, University of Cambridge, Downing Place, Cambridge CB2 3EN, United Kingdom (Quaternary geology, regional geology UK)  
H.R.G.K. Hack, ITC Enschede, P.O. Box 6, 7500 AA Enschede, the Netherlands (engineering geology)  
G.F.W. Hengreen, Laboratory of Paleobotany and Palynology, Utrecht University, Budapestlaan 4, 3584 CD Utrecht, the Netherlands  
R.F.B. Isarin, Archeologic, Pelmolenaan 12-14, 3447 GW Woerden, the Netherlands (sedimentology, Quaternary geology)  
J.W.M. Jagt, Natuurhistorisch Museum Maastricht, De Bosquetplein 6-7, 6211 KJ Maastricht, the Netherlands (paleontology, regional geology SE Netherlands)  
P. Kiden, TNO, P.O. Box 80015, 3508 TA Utrecht, the Netherlands (Quaternary stratigraphy and geological mapping, sea level change and crustal movements, palaeoclimatology and -hydrology)  
J. Kwadijk, WL|Delft Hydraulics, P.O. Box 177, 2600 MH Delft, the Netherlands (hydrology)  
C.G. Langereis, Laboratory of Paleomagnetism, Utrecht University, Budapestlaan 17, 3584 HD Utrecht, the Netherlands (paleomagnetism)  
J.E. Meulenkamp, Institute of Earth Sciences, Utrecht University, Budapestlaan 4, 3584 CD Utrecht, the Netherlands (paleontology, stratigraphy, paleoecology)  
H. Middelkoop, Department of Physical Geography, Utrecht University, P.O. Box 80015, 3508 TC Utrecht, the Netherlands (physical geography)  
K. Rijdsdijk, TNO, P.O. Box 80015, 3508 TA Utrecht, the Netherlands (Quaternary North Sea & Irish Sea Basin, glacial geology)  
R. Speijer, Katholieke Universiteit Leuven, Afdeling Historische Geologie, Redingenstraat 16, B-3000 Leuven, Belgium  
R.T. van Balen, Faculty of Earth and Life Sciences, Vrije Universiteit, De Boelelaan 1085, 1081 HV Amsterdam, the Netherlands (structural geology, modelling)  
W.J.E. van de Graaff, Sir Winston Churchillaan 1009a, 2286 AD Rijswijk, the Netherlands  
N. Vandenberghe, Institute of Earth Sciences, Leuven University, Redingenstraat 16bis, B-3000 Leuven, Belgium (Quaternary geology)  
B. van Geel, Institute for Biodiversity and Ecosystems (IBED), Department of Palynology, Amsterdam University, Kruislaan 318, 1098 SM Amsterdam, the Netherlands (palynology, paleoecology, Quaternary geology)  
A. Veldkamp, Laboratory of Soil science and Geology, Agricultural University, P.O. Box 37, 6700 AA Wageningen, the Netherlands (physical geography)  
Tj.C.E. van Weering, NIOZ, P.O. Box 59, 1790 AB Den Burg (Texel), the Netherlands (marine geology, North Sea)  
H.J.T. Weerts, TNO, P.O. Box 80015, 3508 TA Utrecht, the Netherlands (fluvial sedimentology, lithostratigraphy, Quaternary geology)  
F.P. Wesselingh, Naturalis – National Museum of Natural History, Darwinweg 2, 2333 CR Leiden, the Netherlands (paleontology)