

Volume 95 • Issue 3

2022

GEOGRAPHIA POLONICA

INSTITUTE OF GEOGRAPHY AND SPATIAL ORGANIZATION
POLISH ACADEMY OF SCIENCES

PUBLISHED by the Institute of Geography and Spatial Organization,
Polish Academy of Sciences, Warsaw, Poland

EDITORIAL OFFICE

Twarda 51/55, 00-818 Warsaw, Poland

Phone +48 22-697-88-58

**CONTRIBUTIONS and CORRESPONDENCE related to editorial matters
should be sent to the Editor: geographia.polonica@twarda.pan.pl**

© COPYRIGHT by the Institute of Geography and Spatial Organization,
Polish Academy of Sciences, Warsaw, Poland

Authors' submissions of papers to the Geographia Polonica journal are taken to confirm their granting of the author's or authors' express consent for the free publication of their papers by the Institute of Geography and Spatial Organization PAS in print and electronic formats and on the open Internet under a Creative Commons Attribution CC BY 4.0 license



SUBSCRIPTION INFORMATION: Geographia Polonica (ISSN 0016-7282 print)

is published quarterly

by the Institute of Geography and Spatial Organization,
Polish Academy of Sciences

SUBSCRIPTION ORDERS for Geographia Polonica can be placed with:

ARS POLONA, Obrońców 25, 03-933 Warsaw, Poland
www.arspolona.com.pl

ISSN 0016-7282 (print) 2300-7362 (online)

The primary version of the journal is the printed version

ACCESS TO THIS JOURNAL, information on the content
and forthcoming issues are available free online at:

www.geographiapolonica.pl

Volume 95 • Issue 3 • edited by Marek WIĘCKOWSKI, Paweł PROKOP, Magdalena KUCHCIK

PREPARED FOR PRINT

by Aleksandra Deręgowska

PRINT

Partner Poligrafia Andrzej Kardasz

Szosa Baranowicka 77, 16-030 Grabówka, Poland

CONTENTS

ARTICLES

MICHAŁ SŁOWIŃSKI • KRZYSZTOF SZEWCZYK • JERZY JONCZAK • TOMASZ ZWIĄZEK • DOMINIKA ŁUCÓW • AGNIESZKA HALAŚ • MILENA OBREMSKA • SANDRA SŁOWIŃSKA • DOMINIK RÓG • AGNIESZKA MROCZKOWSKA • AGNIESZKA MARIA NORYŚKIEWICZ • ALEKSANDRA CHOJNACKA • TOMASZ WAŻNY • BARBARA GMIŃSKA-NOWAK • MATEUSZ KRAMKOWSKI • VINCENZO BARBARINO • SEBASTIAN TYSZKOWSKI • BOGUSŁAWA KRUCZKOWSKA • ANNA KOWALSKA • EWA KOŁACZKOWSKA • PAWEŁ SWOBODA • CEZARY KARDASZ • MICHAŁ NIEDZIELSKI • MICHAŁ KONOPSKI • DARIUSZ BRYKAŁA

A novel multiproxy approach to detect the impact of charcoal production on the natural environment in NW Poland – project concept and preliminary results 205

IZABELA ZAWISKA • MICHAŁ WOSZCZYK • MONIKA RZODKIEWICZ

Towards a quantitative reconstruction of lake trophic state in temperate lakes using subfossil cladocera and diatoms: Composition of a training set from NE Poland 227

KATARZYNA LINDNER-CENDROWSKA • KAMIL LEZIAK • PETER BRÖDE

How Covid-19 pandemic influenced air quality in Polish cities – lessons from three lockdowns 255

DOROTA MATUSZKO • KRZYSZTOF BARTOSZEK • JAKUB SOROKA

Relationships between sunshine duration and air temperature in Poland..... 275