

24th International Multidisciplinary Scientific GeoConference (SGEM 2024)

Water Resources. Forest, Marine and Ocean
Ecosystems

SGEM International Multidisciplinary Scientific GeoConference
Volume 24, Issue 3.1

Albena, Bulgaria
1-7 July 2024

ISBN: 979-8-3313-0993-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by SGEM WORLD SCIENCE (SWS) Scholarly Society
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact SGEM WORLD SCIENCE (SWS) Scholarly Society
at the address below.

SGEM WORLD SCIENCE (SWS) Scholarly Society
10/11 Gerlgasse
Vienna 1030, Austria

Phone: +359 2 405 18 41

Fax: +359 2 405 18 65

sgem@sgem.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

CONFERENCE PROCEEDINGS CONTENTS**HYDROLOGY AND WATER RESOURCES**

- 1. COMPARISON OF FIELD AND LABORATORY METHODS FOR THE ASSESSMENT OF SOIL HYDRAULIC CONDUCTIVITY**, PhD Stanislav Paseka.....3
- 2. ABOUT THE APPLICABILITY OF ECOLOGICAL FLOW METHODOLOGY FOR PILOT DRAINAGE AREAS IN DANUBE RIVER BASIN DIRECTORATE IN BULGARIA**, Assoc. Prof. Dr. Elena Bojilova, PhD Borislav Vuchkov, PhD Maya Rankova, PhD Plamen Angelov, PhD Radoslava Ivanova.....11
- 3. ANALYSIS OF WATER RESOURCES IN THE VASLUI HYDROGRAPHIC BASIN, ROMANIA**, PhD. eng. Lavinia Tataru, Professor PhD. eng. Florian Stătescu, Lecturer PhD. eng. Nicolae Marcoie.....19
- 4. ARMA MODELS APPLICATION FOR FORECASTING OF THE RIVER DISCHARGE AND THE HYDROLOGICAL DROUGHT INDEX SRI IN DAMS MANAGEMENT**, Assoc. Prof. Dr. Anna Yordanova, Prof. Dr. Irena Ilcheva, Prof. Dr. Elena Bojilova, Prof. Dr. Olga Nitcheva, Dr. Yordan Dimitrov.....27
- 5. BLACK SEA THERMOHALIN STRATIFICATION: PARTICULARITY AND RECENT CHANGES**, PhD Nadezhda Valcheva.....35
- 6. CATCHMENT ABSTRACTION MANAGEMENT STRATEGY AND ECOLOGICAL FLOW DETERMINATION IN CASE OF NATURA 2000 AREAS**, Assoc. Prof. Dr. Irena Ilcheva, Assoc. Prof. Dr. Vesela Zaharieva, Assoc. Prof. Dr. Anna Yordanova, Assoc. Prof. Dr. Snejanka Balabanova.....49
- 7. CLIMATE ANALYSIS ALONG THE NAVIGATION ROUTES ON THE DANUBE**, Prof. Dr. Eng. Ana-Maria Chiroasca, Prof. Dr. Liliana Rusu, Eng. Victor Ionut Popa, Prof. Dr. Eugen Rusu.....59
- 8. COMPARISON OF TWO METHODS FOR ASSESSMENT OF PH-DEPENDING VALUES IN SURFACE WATER**, Ing. Viera Kováčová.....67
- 9. COMPARISON OF THE RESULTS OBTAINED BY THE PROPOSED METHODOLOGY FOR ENVIRONMENTAL RUNOFF WITH THOSE CALCULATED UNDER THE CURRENT REGULATION**, PhD Maya Rankova, Assoc. Prof. Elena Bojilova, PhD Plamen Angelov, PhD Borislav Vuchkov, PhD Radoslava Ivanova.....75
- 10. DROUGHT INDICES AND VIS-BASED CANOPY STATUS OF VINEYARDS**, Prof. Dr. Mariam Tsitsagi, Ana Palavandishvili, Zaza Gulashvili.....83

11. FISHER-X: AN ENGINEERING CONCEPT TO MONITOR WATER ENVIRONMENTS USING ROBOTIC BIOMIMICRY , Yury Vasquez-Charcape, Gustavo Jamanca-Lino, David Sanchez-Perez, Bruno Cevallos.....	91
12. HYDROECOLOGICAL STATE OF THE SMALL UPLAND ARMENIAN LAKES , Assoc. Prof. Dr. Irina Fedorova, Larisa Ghazaryan, Vsevolod Rudakov, Elizaveta Chezhina, Assoc. Prof. Dr. Grigory Fedorov.....	103
13. HYDROLOGICAL DROUGHT FREQUENCY ANALYSIS IN THE YANTRA RIVER DOWNSTREAM , Dr. Yordan Dimitrov.....	111
14. HYDROMETEOROLOGICAL DROUGHT IMPACT ON CEREAL PRODUCTION IN NORTHERN BULGARIA , Prof. Dr. Nina Nikolova, PhD Simeon Matev, Prof. Dr. Nelly Hristova, Assoc. Prof. Dr. Kalina Radeva.....	121
15. INTEGRATED MODELING OF STAGNATING WATER AND URBAN DRAINAGE SYSTEMS , Assistant Prof. Dr. Marcell Knolmar.....	129
16. INTEGRATION OF EROSION CONTROL MEASURES AND TECHNICAL MEASURES TO PROVIDE EFFECTIVE FLOOD RISK REDUCTION FOR SMALL WATERSHEDS , PhD Stanislav Paseka.....	137
17. MODELLING OF HYDROMORPHOLOGICAL CHANGES DUE TO THE EFFECT OF FISHING PORT "KARANTINATA" , Petya Eftimova, Assoc. Prof. Dr. Nikolay Valchev, PhD Bogdan Prodanov, PhD Nataliya Andreeva, Todor Lambev, Prof. Dr. Lyubomir Dimitrov.....	145
18. MODERN METHODS OF DETERMINING OF THE MOMENTS WATER QUALITY. COMPARING THE RESULTS WITH TRADITIONAL METHOD , PhD Plamen Angelov, PhD Maya Rankova, PhD Ress. Borislav Vuchkov.....	157
19. PRIMARY STUDIES FOR THE PRESENCE OF OFFSHORE FRESHENED GROUNDWATER IN THE BULGARIAN BLACK SEA SHELF , Assoc. Prof. Dr. Olga Nitcheva.....	165
20. RELIABILITY OF PUMPING STATIONS , PhD Eng. Tanya Igneva-Danova.....	175
21. RETENTION-BASED SOLUTIONS FOR OUTFALL REDUCTION , Assoc. Prof. Dr. Marcell Knolmar, Sandor Szel.....	181
22. THE IMPACT OF WASTEWATER EMISSIONS ON THE HEALTH OF THE POPULATION OF BUKHARA (UZBEKISTAN) , Prof. DSc. Alexander Vorobyov, PhD Ress. Kirill Vorobyev, Prof. DSc. Shukhrat TeshaeV, Prof. DSc. Zhamaletdin Mamasaidov, Assoc. Prof. Dr. Tatiana Chekushina.....	189

SOILS

- 23. SOIL PROPERTIES OF CHROMIC LUVISOLS FROM KREMIKOVTSI AREA IN SOFIA MUNICIPALITY**, Prof. Dr. Toma Shishkov, Assoc. Prof. Dr. Emil Dimitrov.....197
- 24. DEGRADED SOILS OF THE MOST BASIN AND THE POSSIBILITIES OF THEIR LOCATION, CLASSIFICATION AND RECLAMATION**, PhD Michal Rehor, Eng. Pavel Schmidt, Eng. Radka Duzekova, Assoc. Prof. Petr Vrablik.....205
- 25. DETECTION OF AGATE-LIKE SOIL COVER STRUCTURES USING NEURAL NETWORK FILTERING OF BIG REMOTE SENSING DATA**, PhD Polina Koroleva, PhD Dmitry Rukhovich, Alexey Rukhovich, Galina Chernousenko.....213
- 26. ECOLOGICAL AGRICULTURE AS A SOCIAL COMPONENT OF ENVIRONMENTAL SUSTAINABILITY AND FOOD SAFETY**, Prof. DSc. Roman Oleksenko, Prof. DSc. Valentyna Voronkova, Prof. DSc. Vitalina Nikitenko, Prof. DSc. Natalya Metelenko, Assoc. Prof. Liudmyla Holovii.....221
- 27. EFFECTS OF ORGANIC FERTILIZER APPLICATION ON AMERICAN CRANBERRY CULTIVATION – MINERAL NUTRITION STATUS, PLANT VITALITY AND POSSIBLE ENVIRONMENTAL ASPECTS**, PhD Andis Karlsons, PhD Anita Osvalde, Msc. Laura Abolina.....229
- 28. FOREST SOILS FROM SREDNA GORA MOUNTAIN IN BULGARIA**, Prof. Dr. Toma Shishkov, Assoc. Prof. Dr. Emil Dimitrov, Prof. Dr. Ekaterina Filcheva,.....237
- 29. LOCAL SOURCE OF PHOSPHORUS FROM SEED PRODUCTION WASTE**, Ing. Antonín Kintl, Ing. Igor Huňady, Ing. Julie Sobotková, Ing. Martin Brtnický, Ing. Jakub Elbl, Ph.D.....245
- 30. MICROMORPHOLOGICAL FEATURES OF SALT-AFFECTED SOILS FROM THE BAIKAL REGION OF RUSSIA**, PhD Irina Yamnova, PhD Galina Chernousenko.....253
- 31. MULTITEMPORAL SPECTRAL CHARACTERISTICS OF INTRAFIELD SOIL FERTILITY HETEROGENITY ZONES OF NORTHERN KAZAKHSTAN ARABLE LANDS**, Vasily Rashkovich, PhD Dmitry Rukhovich, Dmitri Borshev.....261
- 32. PHYTOSTABILIZATION OF SULPHIDE MINE TAILINGS** Ph.D. candidate Raghad Soufan, Prof. Dr. Antoine Karam, Prof. Dr. Ahmed Aajjane269

33. QUALITY OF POST-HARVEST RESIDUES WHEN GROWING MAIZE IN THE SYSTEM OF MIXED CROPPING, Ing. Antonin Kintl, Ing. Julie Sobotkova, Ing. Jakub Elbl, Ing. Martin Brtnicky, Ing. Igor Hunady	277
34. SEASONAL DYNAMICS IN THE MICROBIOLOGICAL STATUS OF FOREST SOILS FROM THE TERRITORY OF VITOSHA NATURE PARK, PhD Bilyana Grigorova-Pesheva, PhD Boyka Malcheva, PhD Biser Hristov.....	285
35. SELECTION OF CASE STUDY AREAS OF THE MOST BASIN FOR SOLVING RECLAMATION ISSUES OF EUROPEAN PROJECT REECOL, RNDr. PhD Michal Rehor, Eng. Pavel Schmidt, Eng. Radka Duzekova, Assoc. prof. Frantisek Helebrant	293
36. SOIL PROTECTION AGAINST SOIL EROSION BY USING ANTI-EROSION METHODS IN THE HILL AREA OF BUZAU, ROMANIA, Assoc. Prof. Dr. Radu Alexandra Teodora, PhD Burcea Mariana.....	301
37. SPECTRAL CHARACTERISTICS OF GROUPS AND TYPES OF LANDS, CONSTRUCTED BY AVERAGIN LONG-TERM SERIES OF VEGETATION INDECES, Dmitry Borshchev, PhD Dmitry Rukhovich, Vasily Rashkovich	313
38. TEMPORAL VARIATIONS IN GREENHOUSE GAS EMISSIONS FROM AGRICULTURAL SOILS, PhD Kristine Valujeva, Jovita Pilecka-Ulcugaceva, Kristaps Siltumens, Olga Skiste, PhD Inga Grinfelde.....	321
39. STATISTICAL AND CHEMICAL ANALYSIS OF SOIL POLLUTION FROM KOSHTOVA LANDFILL MITROVICE – KOSOVO, MSc. Bahri Sinani, Prof. Dr. Blazo Boev, Prof. Dr. Arianit Reka, Prof. Dr. Ivan Boev, Berat Sinani, MSc. Elida Lecaj, MSc. Adelina Haskaj	329

FOREST ECOSYSTEMS

40. A COMPARATIVE STUDY OF CARBON SEQUESTRATION IN DIFFERENT TYPES OF FOREST, PhD Nodar Khujadze, Prof. DSc. Lia Matchavariani.....	339
41. BIOMETRIC MEASUREMENTS AND DEMOGRAPHIC STRUCTURE OF DUCKS HUNTED ON LAKE ENGURE IN THE PERIOD 1993-2022, Dr. Linards Sisenis, Prof. Irina Pilvere, Bc. Toms Endzins, PhD Baiba Jansone, Dr. Oskars Keiss	347
42. ASSESSMENT OF THE QUALITY AND PRODUCTIVITY OF LODGEPOLE PINE GROWN IN THE WESTERN PART OF LATVIA, Prof. Linards Sisenis, Prof. Irina Pilvere, PhD Baiba Jansone, Dr. Dace Brizga, Mg. Edgars Dubrovskis.....	357

43. FIRE SAFETY IN PEAT EXTRACTION SITES IN LATVIA , Assoc. Prof. Dace Brizga, Mg. silv. Edgars Dubrovskis, Prof. Dr. Olga Miezite, Prof. Dr. Linards Sisenis, Mg. Kristine Kirsbauma.....	367
44. MACROMYCETES OF BEECH FOREST IN MTIRALA NATIONAL PARK, GEORGIA , Assoc. Prof. Dr. Inga Diasamidze, PhD Gia Bolkvadze, Assoc. Prof. Dr. Natela Varshanidze, Assoc. Prof. Nana Zarnadze, Nino Varshanidze.....	375
45. NATURAL REGENERATION OF PINUS SYLVESTRIS L. FROM SEED TREES IN POOR MINERAL SOILS , Prof. Dr. Olga Miezite, Mg. silv. Edgars Dubrovskis, Dr. Dace Brizga, Mg. Aija Berzina.....	383
46. STOCHASTIC SIMULATION OF SELF-THINNING , Prof. Dr. Petras Rupsys	393
47. TAXONOMIC AND ECOLOGICAL STRUCTURE OF FREE-LIVING AND PLANT PARASITIC NEMATODES IN POTATO FIELDS IN KHULO (AJARA, EASTERN GEORGIA) , Assoc. Prof. Dr. Lali Jgenti, Prof. Dr. Eka Tskitishvili, Tengiz Vadatchkoria	401
48. THE CHANGES OF FOREST GROUND VEGETATION CAUSED BY GRAZING, LATVIA , Prof. Inga Straupe, Bac. silv. Alise Dimane.....	409
49. THE EFFECT OF TRAIL PATHS IN GRASSLAND ECOSYSTEMS USING A SWOT-AHP HYBRID METHOD , PhD Aimilia Lempesi, Christodoulos Daoutis.....	417

MARINE AND OCEAN ECOSYSTEMS

50. ROLE OF UNACCOUNTED SOURCES OF TOTAL NITROGEN AND PHOSPHORUS IN THE NEVA BAY ANTHROPOGENIC EUTROPHICATION , Assoc. Prof. Dr. Victor Tretyakov, Stepan Klubov, Prof. DSc. Vasilij Dmitriev, Anna Nikulina	427
---	-----