

The 5th WASWAC World Conference

**ADAPTATION STRATEGIES
FOR SOIL AND WATER CONSERVATION
IN A CHANGING WORLD**

Program



19th–23rd June 2023

Olomouc • Czech Republic

PROGRAM

MONDAY 19th JUNE 2023

17:00–18:00 Registration

18:30 Welcome drink

TUESDAY 20th JUNE 2023

10:00–10:45 Opening ceremony

10:45–12:00 Keynote speakers

10:45 Possible policies and actions to protect the soil cultural and natural heritage of Europe (*Costantini*)

11:15 Soil Erosion Monitoring of Agricultural Land of Czech Republic (*Pavlík, Hřebíčková, Kapička, Šarapatka, Dumbrovský, Bednář*)

11:45–12:00 Discussion

Lunch

Session: ANALYSIS OF SOIL AND WATER PROTECTION ON A GLOBAL AND LOCAL SCALE

13:15 Understanding and mitigating extreme diffuse pollution from Norwegian agricultural watersheds (*Confesor, Øygarden, Bechmann*)

(Lectures marked in bold are introductory lectures in individual thematic blocks)

13:35 Topography-based detection of Ephemeral Gullies suitable for protection by Grassed Waterways in Eastern Austria (*Brunner, Schmaltz, Steger, Strauss*)

13:50 Ephemeral gullies and its characteristic in conditions of the Czech Republic (*Dumbrovský, Sobotková*)

14:05 Comparison of the Physical Properties of Soils on Transverse Profiles along the Gullies (*Živanovič, Rončević, Čorluka, Čebašek, Rupar*)

14:20 Natural and bio-technical water retention measures in the Švihov reservoir catchment – watershed management, researchers, designers and farmers work together (*Zajíček, Fučík, Hejduk, Kvítek*)

14:35–15:00 Discussion

15:00–15:30 Coffee break

15:30 **The effect of concentrated flow on sediment and nutrient retention in vegetated filter strips** (*Schmaltz, Ramler, Strauss*)

15:50 Impacts of climate change on erosion processes (*Podhrázká, Kučera, Karásek, Pochop*)

16:05 Erosion modelling in Norway: changing needs and opportunities (*Barneveld*)

16:20–16:30 Discussion

16:30–17:30 Poster session

19:00 Social evening

WEDNESDAY 21st JUNE 2023

Session: **ANALYSIS OF SOIL AND WATER PROTECTION ON A GLOBAL AND LOCAL SCALE**

9:00 **Changes in soil fauna (Acari: Oribatida, Mesostigmata; Nematoda) communities in Scots Pine (*Pinus sylvestris* L.) forests across S-N European gradient** (*Kamczyc, Pers-Kamczyc, Wierzbicka, Dobies, K. Urbanowski, Malica, Skorupski, Oleksyn*)

9:20 Tolerance of ectomycorrhizal mycelium of *Paxillus involutus* exposed to Pb (Szuba)

9:35 Vegetation growth dynamics in the water level fluctuation zone of the Three Gorges Reservoir and its responses to habitat stressing (Rao, Tang)

or

An experimental study on snowmelt – wind – rainfall compound erosion on sloping farmlands of Chinese typical Mollisol region (Zheng, Zhao)

9:50 Precious Soil and Water Resources – Sustainable Land Management (Zlatic)

10:05–10:20 Discussion

10:20–10:50 Coffee break

Session: RESEARCH INTO THE IMPACT OF ANTHROPOGENIC AND NATURAL INFLUENCES ON SOIL AND WATER FROM THE POINT OF VIEW OF PRODUCTION AND NON-PRODUCTION

10:50 Possible hazards associated with the use of wastewater and sludge from wastewater treatment plants in agriculture (Kodešová, Švecová, Klement, Fér, Fedorova, Nikodem, Grabić)

11:10 Economic Effects of Applying the Future Agricultural Production Structure Model (FAPSMS): The Case of Barička River Basin (Tričković, Rončević, Živanović, Grujić, Stefanović, Jovanović, Zlatic)

11:25 Methodology to quantify the global agricultural crop footprint including soil impacts (Ascaso, Palacino, Valero, Valero)

11:40 The Effects of Water Erosion on Soil Properties and Crop Yield in a Highly Exploited Agricultural Area of South Moravia, Czech Republic (Šarapatka, Bednář, Černohorský)

11:55–12:15 Discussion

Lunch

- 13:30 How effective are undersown crops and strips-tillage at mitigating soil erosion and pesticide transfer in maize crops? Results and insights from field trials (*Clement, Bielders, Degré, Manssens, Foucart, Pigeon, Blondel, Huyghebaert*)
- 13:45 Impact of plastic pollution on the quality of arable soils in the Sava and Danube river valleys (*Saljnikov, Grujić, Jovković, Stanković, Krnjajić, Marjanović*)
- 14:00 Soil organic carbon stock in a Colluvisol profile: application of hyperspectral imaging to study soil organic carbon variability in a deep soil profile (*Reyes Rojas, Žižala, Matoušková, Zádorová*)
- 14:15 Forest logging residues as an important source of nutrients and carbon sink on the clear-cuts area (not only) after the bark beetle calamity (*Šrámek, Fadrhonsová, Neudertová Hellebrandová, Novotný*)
- 14:30 Application of biochar in a Chernozem in northern Kazakhstan: effects on soil properties and spring wheat yield (*Lo Papa, Toktar, Conte, Shayakhmetova, Bakirova, Ahmetov, Mukanova, Balakhmetova, Dazzi*)
- 14:45 Development of soil organic carbon stock on agricultural soils of Slovakia (*Barančíkova, Koco, Makovníková, Halas, Skalský, Kobza*)

15:00–15:20 Discussion

15:20–15:40 Coffee break

NATIONAL AND INTERNATIONAL GOALS, STRATEGIES AND DIRECTIONS FOR SOIL AND WATER CONSERVATION FROM THE POINT OF VIEW OF PRESENT AND FUTURE GENERATIONS

- 15:40 **UNCCD – the Rio Convention for binding the issues with soil and water conservation** (*Houšková*)
- 16:00 Watershed health monitoring-based strategy: A tool for watershed adaptive management (*Sadeghi, Meisina, Maeker*)

16:15 Living labs and lighthouses lead towards healthy soils in Europe
(*Sobocká*)

16:30 Strategy and priorities of soil cover development research and
monitoring in Slovakia (*Kobza*)

16:45–17:00 Discussion

17:00–18:00 Poster session

**18:00 Meetings of ESSC, Czech Society of Science,
Societas Pedologica Slovaca, etc.**

THURSDAY 22nd JUNE 2023

PROFESSIONAL EXCURSIONS

FRIDAY 23rd JUNE 2023

9:00–11:00 Keynote speakers

9:00 **Mapping of soil-based ecosystem services and soil threats of
European arable lands – A systematic review and new approaches**
(*Reyes Royas, Coblinski, Cornu, Piccini, Saby, Vašát, Borůvka*)

9:30 **Changing paradigms in combating desertification. A perspective
from Mediterranean Europe** (*Rubio*)

10:00 **Forest soils of the Czech Republic – current state and change
expected after the bark beetle outbreak** (*Šrámek, Borůvka,
Neudertová Hellebrandová, Vašát, Sáňka O., Fadrhonsová, No-
votný, Sáňka M.*)

10:30 **A win-win strategy for consolidating soil awareness in politics
and reaching an effective soil governance in society** (*Dazzi, Lo
Papa*)

11:00–11:30 Discussion

11:30–12.30 Conclusion and Closing Ceremony

Lunch

POSTER PRESENTATIONS

Session: ANALYSIS OF SOIL AND WATER PROTECTION ON A GLOBAL AND LOCAL SCALE

The Potential of Hyperspectral Aerial Surveys for Identifying Waterlogged Areas in Agricultural Landscapes (*Bednář, Netopil, Šarapatka*)

Enhancing direct runoff estimates through modification of the NRCS-CN method (*Caletka, Drbal, Fučík*)

Evaluation of the agroecosystem service potential—regulation of the soil erosion (*Pálka, Makovníková*)

Drop Size Generated by Dripping Rainfall Simulators for Soil Research—Review (*Rončević, Živanović, H. van Boxel, Iserloh, Štrbac, Kašanin-Grubin, Antić*)

Measures for water retention in landscape in the Czech Republic (*Štěpánková, Dzuráková, Osičková*)

Interactive effects of wind velocity and slope gradient on splash erosion (*Kallehouei, Sadeghi, Khaledi Darvishan*)

Long-term agrochemical testing of agricultural soils related to natural and socio-economic conditions of Czech Republic (*Houška, Šipoš, Kaláb, Vašát, Pavlů, Penížek, Bednář, Václavík, Šarapatka, Borůvka*)

Monitoring of soil properties and groundwater level in alluvial floodplain forest (*Sedlák, Pospíšilová, Prudil, Basu*)

Multi-level nitrogen balance at temperate forests in the territory of the Czech Republic (*Samec, Rychtecká, Sirota*)

Migration of organic carbon and Ca in soddy-podzolic soil limed by chalk: laboratory trial (*Litvinovich, Lavrishchev, Bure, Zhapparova, Aisakulova, Gömöryová*)

Potentially toxic elements in agricultural soils in the Czech Republic—state and development (*Poláková, Reiningger, Kubík*)

A study of salinization of agricultural soils in the Maisky district of the Pavlodar region of Kazakhstan, using remote sensing data (*Rakhmanov, Šarapatka, Alibekova, Hekera, Černohorský, Bednář, Smanov*)

Response of soil chemical and biochemical properties to biochar and (biochar + compost) application under *Zea mays* in a degraded environment (*Notario Del Pino, González Correa, Raya Ramallo, Arco Lázaro, Haroun Tabraue*)

Impact of black cherry (*Prunus serotina Ehrh.*) on soil mites (*Acari: Mesostigmata*) in Scots pine (*Pinus sylvestris L.*) stands growing on post-agricultural lands (*Malica, Urbanowski, Raczka, Skorupski, Kamczyk*)

Determination of soil losses by wind erosion to support proposals for optimal measures to protect soil from wind erosion (*Kučera, Podhrázská, Blecha*)

Session: **RESEARCH INTO THE IMPACT OF ANTHROPOGENIC AND NATURAL INFLUENCES ON SOIL AND WATER FROM THE POINT OF VIEW OF PRODUCTION AND NON-PRODUCTION**

Byzantine agricultural terraces and their impact on soil conservation water distribution and fruit trees growth in the central Negev Highlands desert south Israel (*Ashkenazi, Chen*)

Degradation of traditional vineyards in Slovakia by abandonment and soil erosion: A case-study of Vráble viticulture district, Slovakia (*Lieskovský, Kenderessy*)

Soil cover change since Systematic Agricultural Soil Survey in the 1960s – Czech Republic (*Pavlů, Penížek, Zádorová, Žížala, Houška, Borůvka, Biney*)

Soil cover around the world's deepest flooded abyss near Hranice (*Vlček, Šimečková, Oppeltová, Sedláček, Geršl*)

Updates in the land evaluation of the agricultural land fund of the Czech Republic (*Blecha, Pavlík, Hřebíčková*)

Climate regulation ecosystem services in selected regions of Slovakia
(*Makovníková, Pálka, Kološta*)

Changes in watershed sustainability due to air pollution (*Mirchooli, Zabihi Seilabi, Sadeghi*)

Vertical distribution of radionuclides in soil and its effect on groundwater vulnerability (*Kratina, Juranová, Marešová, Sedlářová, Kadlecová, Novák, Pohlová, Datel*)

The influence of different tillage methods in the interrow of vineyards on soil erosion (*Čížková, Zemánek, Burg*)

Effects of inoculation of soil microorganisms on organic matter, stability of aggregates and soil available phosphorus under freeze-thaw cycle (*Gharemahmudi, Hamidreza Sadeghi, Najafinejad*)

Do soil properties reflect the changes in a forest stand structure? A case study from the primeval beech forest in Havešová, Slovakia (*Židó, Šumichrast, Kucbel, Gömörýová*)

Changes of chemical properties and carbon stock in forest soils after clearcutting (*Fadrhonsová, Šrámek, Novotný, Tejnecký, Valtera*)

The effect of forest management on physico-chemical properties of sandy soils (*Gömörýová, Židó*)

Relationship between forest management and soil water content dynamics as a forest ecosystem services factor (*Homolák, Kašiar*)

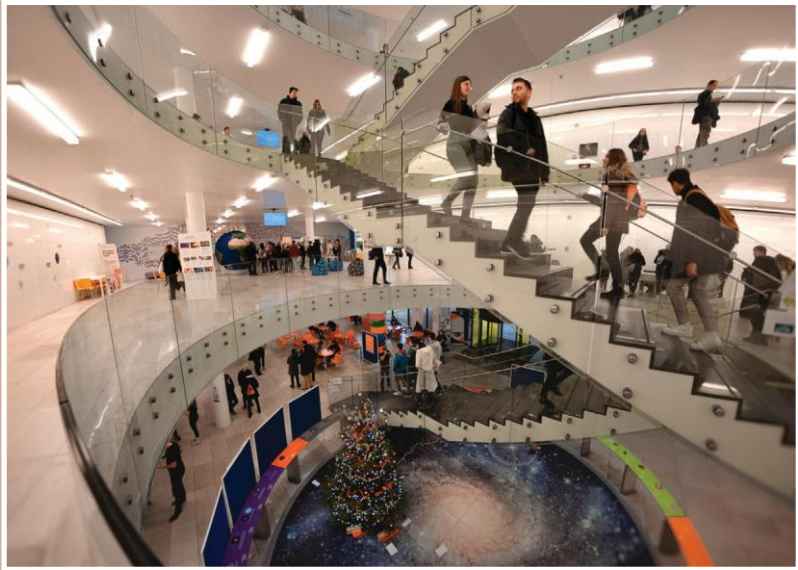
Soil development on metamorphic rocks in the conditions of protected and anthropogenically affected areas of forest ecosystems (*Žigová, Štastný, Mikysek*)

The effect of whey-based hydrogel addition on soil water holding capacity and availability of nutrients (*Čechánková, Skála, Horvátová, Vácha*)

Chemical changes in Chernozems as affected by water erosion (*Pospíšilová, Boturová, Plisková, Menšík*)

Pesticides in soil and water in chosen agricultural catchments in the Czech Republic (*Konečná, Karásek, Zajíček, Nováková, Sářka, Halešová*)

Preliminary results of the geochemical, hydrogeological and pedological study of the Javoříčko–Mladeč karst area (*Novotný, Novotná, Kryštofová, Hadacz, Baldík, Buriánek, Rez, Sedláček, Janderková, Müller, Drahoš*)



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