United Nations
Educational, Scientific and
Cultural Organization

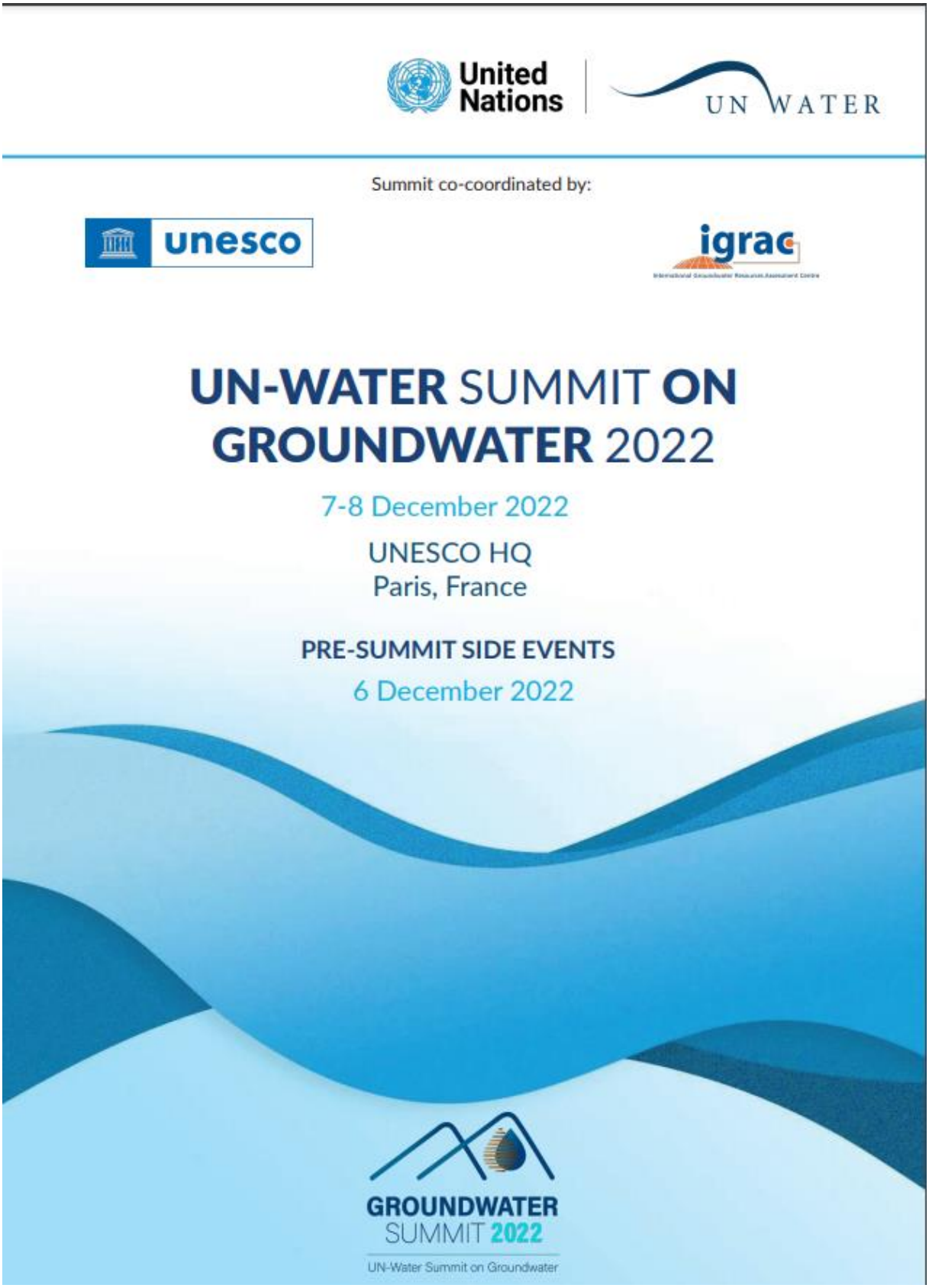
Intergovernmental
Hydrological
Programme

UNESCO Land Subsidence
International Initiative

Newsletter of the Unesco Land Subsidence International Initiative

Vol.28 July 2022

UN-Water Summit 2022



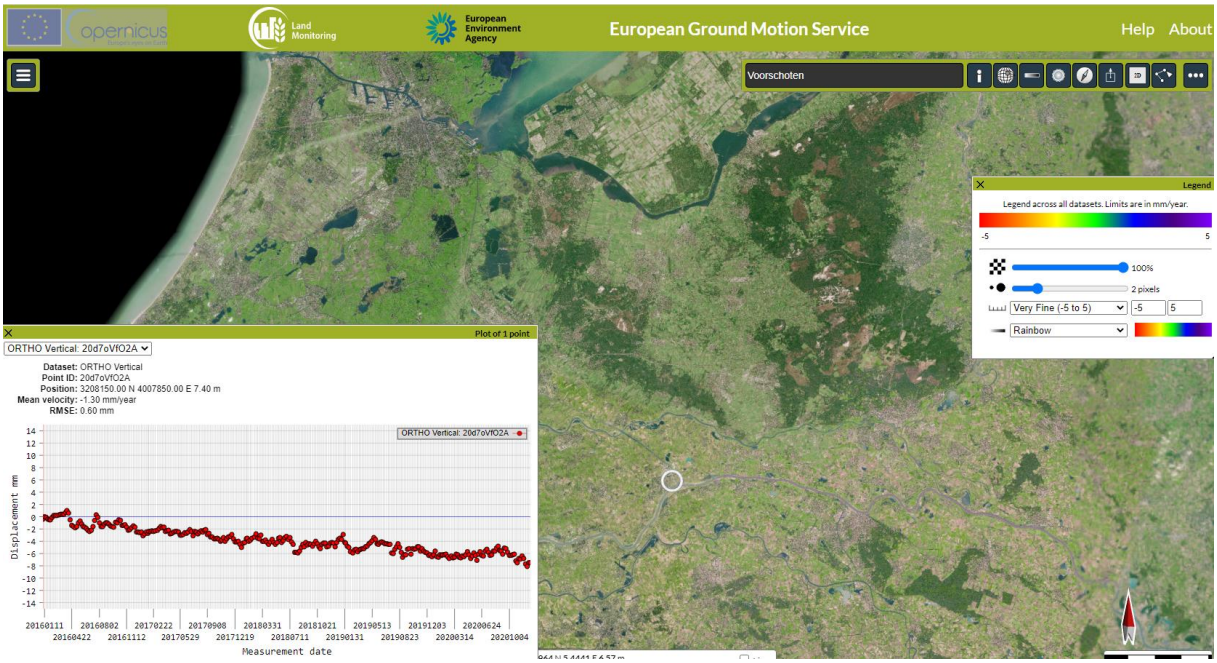
http://www.groundwater-summit.org/

Mapping

New Service Available: Copernicus European Ground Motion Service; click on the map and you can see the subsidence rate on your chosen location!

https://un-spider.org/news-and-events/news/new-service-available-copernicus-european-ground-motion-service

https://egms.land.copernicus.eu/



New Literature

France

Arthur Charpentier et al., Predicting drought and subsidence risks in France

https://nhess.copernicus.org/articles/22/2401/2022/nhess-22-2401-2022.pdf

Greece, Kalochori

LAND SUBSIDENCE INDUCED BY THE OVEREXPLOITATION OF THE AQUIFERS IN KALOCHORI VILLAGE – NEW APPROACH BY MEANS OF THE COMPUTATIONAL GEOTECHNICAL ENGINEERING

C. Loupasakis, D. Rozos

doi: 10.12681/bgsg.11298

https://ejournals.epublishing.ekt.gr/index.php/geosociety/article/download/11298/11343/22719

Indonesia

Nurhidayah, L., Davies, P., Alam, S. et al. Responding to sea level rise: challenges and opportunities to govern coastal adaptation strategies in Indonesia. Maritime Studies (2022). https://doi.org/10.1007/s40152-022-00274-1

Indonesia, peatlands

Yuti Ariani Fatimah

How do we care about a 'handicapped' land? A Study of Indonesian Peatland

https://www.4sonline.org/how-do-we-care-about-a-handicapped-land-a-study-of-indonesian-peatland/

Iran, Rafsanjan Plain

Ali Mahrabi et al.,

Monitoring land subsidence and determining its relationship with groundwater abstraction using PS-InSAR method, Case study of Rafsanjan plain, Iran

https://www.dggv.de/e-publikationen/monitoring-land-subsidence-and-determining-its-relationship-with-groundwater-abstraction-using-ps-insar-method-case-study-of-rafsanjan-plain-iran/

Iran, Shabestar-Sufian Plain

Roostaei, Sh., Rezaei Moghaddam, M. H., Yarahmadi, J., Najafvand, S. (2022). The Detection of Subsidence for Ground Stability Using Radar Interferometry Method with Permanent Scatterers (A Case Study: Shabestar-Sufian Plain). Geography and Environmental Sustainability, 12 (3), 57-74. DOI:10.22126/GES.2022.7538.2508
https://ges.razi.ac.ir/article_2152_e2f13c544f8327f4bff3f08d676086c0.pdf

Italy, Bologna

Map of ESA land subsidence:

https://www.esa.int/ESA_Multimedia/Images/2022/07/Subsidence_patterns_around_Bologna

Italy, Calabria

Barbaro, G. et al., Possible Increases in Floodable Areas Due to Climate Change: The Case Study of Calabria (Italy). Water 2022, 14, 2240. https://doi.org/10.3390/w14142240

https://www.mdpi.com/2073-4441/14/14/2240/pdf?version=1657963570

Madagascar, Atsimo Andrefana region

Dariusz Knez et al.,

Land Subsidence Assessment for Wind Turbine Location in the South-Western Part of Madagascar

https://www.mdpi.com/1996-1073/15/13/4878/pdf?version=1656756845

Myanmar, Ayeyarwady Delta

Vogel, A. et al., Identifying LandUse Related Potential Disaster Risk Drivers in the Ayeyarwady Delta

(Myanmar) during the Last 50 Years (1974–2021) Using a Hybrid Ensemble Learning Model. Remote Sens.2022, 14, 3568.

https://doi.org/10.3390/rs14153568

https://www.mdpi.com/2072-4292/14/15/3568/pdf?version=1658753195

Poland,

A. Malinowska et al.,

Mapping of slow vertical ground movement caused by salt cavern convergence with Sentinel-1 tops data.

https://bibliotekanauki.pl/articles/219680

PR China, Beijing Plane

Li, M. et al., Characterization of Aquifer System and Groundwater Storage Change Due to South-to-North Water Diversion Project at Huairou Groundwater Reserve Site, Beijing, China, Using Geodetic and Hydrological Data. Remote Sens.2022, 14, 3549. https://doi.org/10.3390/rs14153549

https://www.mdpi.com/2072-4292/14/15/3549/pdf?version=1658662304

PR China, Quinghai Province

Jin, B.; Yin, K.; Li, Q.; Gui, L.; Yang, T.; Zhao, B.; Guo, B.; Zeng, T.; Ma, Z. Susceptibility Analysis of Land Subsidence along the Transmission Line in the Salt Lake Area Based on Remote Sensing Interpretation. Remote Sens. 2022, 14, 3229. https://doi.org/10.3390/rs14133229

https://www.mdpi.com/2072-4292/14/13/3229

Spain,

SerafínGonzález-Prieto et al.,

Soil physico-chemical changes half a century after drainage and cultivation of the former Antela lake (Galicia, NW Spain)

https://www.livesportv.online/pageone-https-www.sciencedirect.com/science/article/abs/pii/S0341816222005082

Taiwan

Muhammad Zeeshan, Thomas J. Burbey et al.,

Estimation of annual groundwater changes from InSAR-derived land subsidence

https://oa.mg/work/10.1111/wej.12802

USA, Arizona

University of Arizona Factsheet on Water in Pima County

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Administration/AdminMemosForWeb/2022/July/2022-july-29-university-of-arizona-factsheet-on-water-in-pima-county.pdf

Vietnam, Can Tho City

Hieu Ngo et al.,

An Efficient Modeling Approach for Probabilistic Assessments of Present-Day and Future Fluvial Flooding.

https://oa.mg/work/10.3389/fclim.2022.798618

Vietnam, Mekong Delta

Hieu Ngo et al.,

An Efficient Modeling Approach for Probabilistic Assessments of Present-Day and Future Fluvial Flooding

July 2022Frontiers in Climate 4:798618

DOI: 10.3389/fclim.2022.798618

https://www.researchgate.net/publication/362198612_An_Efficient_Modeling_Approach_for_Probabilistic_Assessments_of_Present-Day_and_Future_Fluvial_Flooding

Maps

Mexico, Mexico City

Mexico City: ERS SAR interferometric subsidence map for second half of 1996 (5cm/year subsidence per color cycle) compared to contour lines of equal velocity of ground sinking calculated from levelling campaigns in 1994 and 1996 (provided by Vega), data processing by Gamma Remote Sensing.

You can download this map.

https://www.esa.int/ESA_Multimedia/Images/2001/04/Mexico_City_ERS_SAR_interferometric_subsidence_map

Monitoring

PR China

Zhang, P.; Guo, Z.; Guo, S.; Xia, J. Land Subsidence Monitoring Method in Regions of Variable Radar Reflection Characteristics by Integrating PS-InSAR and SBAS-InSAR Techniques. Remote Sens. 2022, 14, 3265. https://doi.org/10.3390/rs14143265

PhD Position

The Netherlands, Wageningen University

PhD-position: Climate Adaptation Engineering Solutions in Urban Deltas

Please apply in English before 28 August 2022 via the application button and upload your motivation and CV including three references. Your motivation letter should not exceed more than 1 page.

https://www.wur.nl/nl/vacature/PhD-position-Climate-Adaptation-Engineering-Solutions-in-Urban-Deltas-1.htm

Switzerland, Neuchatel University

PhD position – Carbon fluxes in agricultural peatlands: new insights from soil subsidence monitoring in the Seeland region (Switzerland)

https://groups.google.com/g/hydrosci-l/c/Vqz-EFjGN5k?pli=1

Peat

The Netherlands,

Lippmann, T. J. R., Heijmans, M., Dolman, H., van der Velde, Y., Hendriks, D., and van Huissteden, K.: PVN 1.0: using dynamic PFTs and restoration scenarios to model CO2 and CH4 emissions in peatlands, Geosci. Model Dev. Discuss. [preprint], https://doi.org/10.5194/gmd-2022-143, in review, 2022.

https://gmd.copernicus.org/preprints/gmd-2022-143/

Position Assistant Professor

The Netherlands, Utrecht University

At the Copernicus Institute of Sustainable Development at Utrecht University, we are looking for an enthusiastic and ambitious colleague to further strengthen our group with a specific focus on nature-based solutions on climate adaptation and water.

Unsustainable land management and climate change have degraded ecosystems and natural carbon and water storage processes, leading to soil degradation and land subsidence as well as increased flooding and droughts. Meeting the Paris Climate Agreement by limiting global warming to below 1.5 - 2 degrees Celsius at the end of the 21 century requires negative greenhouse gas emissions. Much is expected of land-based negative emissions to sequester carbon by afforestation, reforestation, or soil and wetland restoration.

With nature based solutions, we expect to increase adaptive capacity to water-related effects of climate change while at the same time increasing carbon sequestration in the landscape and minimizing loss of biodiversity. We search for candidates with knowledge on soil and water processes in ecosystem functioning, preferably with empirical and modelling skills.

The deadline for application is 15/08/2022

http://www.earthworks-jobs.com/climate/utrecht22074.html

Special Issue

Special Issue "New Developments in Remote Sensing for the Environment"

A special issue of Remote Sensing (ISSN 2072-4292). This special issue belongs to the section "Environmental Remote Sensing".

Deadline for manuscript submissions: 31 December 2022 |

https://www.mdpi.com/journal/remotesensing/special_issues/New_Advancements_Environmental_Remote_Sensing

From the Press

France

Ten million homes in France risk structural cracks after heatwaves

https://www.connexionfrance.com/article/French-news/Ten-million-homes-in-France-risk-structural-cracks-after-heatwaves

Indonesia, Jakarta

Jakarta people are digging their own wells for water, but this makes the city sink faster

https://www.intellasia.net/jakarta-people-are-digging-their-own-wells-for-water-but-this-makes-the-city-sink-faster-1066146

Dozens of Rivers in Jakarta Potentially Cannot Flow into the Sea, this is the reason, said the Minister of PUPR

https://indonesia.postsen.com/news/94302/Dozens-of-Rivers-in-Jakarta-Potentially-Cannot-Flow-into-the-Sea-this-is-the-reason-said-the-Minister-of-PUPR.html

UK

Hot weather set to spark flood of home insurance claims over subsidence

https://www.express.co.uk/news/uk/1648192/hot-weather-home-insurance-claims-subsidence

USA, California

Groundwater depletion causes California farmland to sink. Stanford study shows water levels must rise to halt subsidence.

https://news.stanford.edu/2022/06/02/will-californias-san-joaquin-valley-stop-sinking/