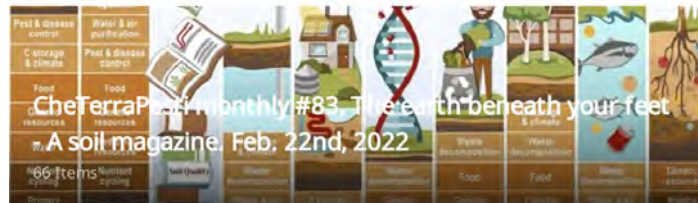


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a world of soil... ..a sustainable world!



City trees and soil are sucking more carbon out of the atmosphere than previously thought

Phys

They may not have lungs like we do, but the soil and trees are breathing in and out all of the time. Trees take in carbon dioxide (CO₂), release oxygen by way of photosynthesis, and store carbon in their trunks.



Sustainability at the crossroads

Nature

A look back at 2021 through the Sustainable Development Goals.



Environmental footprint calculators have one big flaw we need to talk about

🗨 The Conversation

Environmental footprint calculators may promise to help consumers lead a greener life. But they may in fact encourage choices that don't benefit – or even harm – the environment.



How climate change is washing away precious evidence of our distant past

🗨 The Conversation

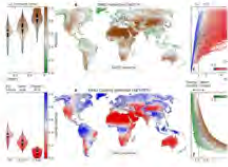
Increasing rainfall and degrading peatland are threatening archaeological artefacts buried in UK land.



Winter road salting has year-round consequences

🗨 The Conversation

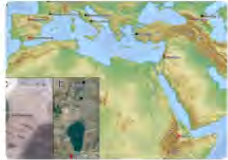
Salty water seeps into our soils and groundwater through surface runoff and storm-water pipes. The long-term storage of salt in the environment impacts aquatic life, infrastructure and drinking water.



Global climate-driven trade-offs between the water retention and cooling benefits of urban greening - Nature Communications

N Nature

Urban greening can help to mitigate both heat as well as flooding risks, but how these effects interact is not well known. Here, the authors provide a global analysis and show that most cities benefit from one of



The earliest Pleistocene record of a large-bodied hominin from the Levant supports two out-of-Africa dispersal events - Scientific Reports

N Nature

The paucity of early Pleistocene hominin fossils in Eurasia hinders an in-depth discussion on their paleobiology and paleoecology. Here we report on the earliest large-bodied hominin remains from the Levantine corridor:



The global carbon sink potential of terrestrial vegetation can be increased substantially by optimal land management - Communications Earth & Environment

N Nature

Excessive emissions of greenhouse gases - of which carbon dioxide is the most significant component, are regarded as the primary reason for increased concentration of atmospheric carbon dioxide and global



Harmful subsidies: why is the world still funding the destruction of nature?

 the Guardian

Government-financed support in sectors including agriculture, fossil fuels and water is incentivising the annihilation of the natural world. But reforming the system is politically fraught



World spends \$1.8tn a year on subsidies that harm environment, study finds

 the Guardian

Research prompts warnings humanity is 'financing its own extinction' through subsidies damaging to the climate and wildlife



Desertification risk fuels spatial polarization in 'affected' and 'unaffected' landscapes in Italy - Scientific Reports

Nature

Southern Europe is a hotspot for desertification risk because of the intimate impact of soil deterioration, landscape transformations, rising human pressure, and climate change. In this context, large-scale empirical



Ecosystem-based adaptation to climate change through residential urban green structures: co-benefits to thermal comfort, biodiversity, carbon storage and social interaction

One Ecosystem

Climate change adaptation is essential to mitigate risks, such as extreme weather events triggered by global warming and amplified in dense urban environments. Ecosystem-based adaptation measures, such as urban



The Sheep Look Up: cult 1970s sci-fi novel predicted today's climate crisis

The Conversation

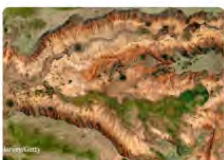
Sci-fi classic *The Sheep Look Up* has lessons for today on environmental change, says an expert.



Coffee may become more scarce and expensive thanks to climate change – new research

The Conversation

More than half of the world's best growing land could become less suited for coffee.



A call for governments to save soil

Nature

To ensure food security, the world must stop letting fertile soil wash and blow away.



Africa's growing road network may affect ecosystems: we reviewed the evidence

 The Conversation

The presence of roads, even inside protected areas, may pose a significant threat to species.



Brazil launches plan to expand mining in Amazon

 Phys

Brazilian President Jair Bolsonaro launched a plan Monday to expand gold mining in the Amazon rainforest, drawing criticism from environmentalists for bolstering an industry accused of rampant deforestation, pollution



Report: Plastic pollution is also pervasive in our agricultural soils

 Phys

The scourge of unsightly images of plastic refuse littering our beaches and oceans always receives much attention. But a new report by the Food and Agriculture Organization of the United Nations (FAO) suggests



Will Beijing's 'green Olympics' really be green?

 Phys

China wants to use the Beijing Winter Olympics to showcase its green credentials but there are concerns over the environmental cost of a Games relying on artificial snow in one of the driest places in the country.



Bare winter fields to disappear as part of new plan for healthy greener countryside

 The Conversation

Soil health is at the heart of new government plans for farm payments with policies to increase soil organic matter and promote winter cover.



New Research Shows Regenerative Practices Increase Nutrient Density in Food

NTF No-tillfarmer

New research led by David Montgomery suggests that regenerative farming practices increase the density of many crop nutrients, particularly micronutrients and phytochemicals relevant to plant health and chronic



Listen

Sounding Soil

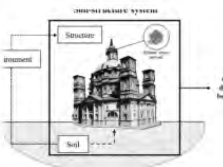
This is the Sounding Soil sound map, a map with different soil sounds and noises.



Onset of modern sea level rise began in 1863, study finds

 Phys

An international team of scientists including Rutgers researchers has found that modern rates of sea level rise began emerging in 1863 as the Industrial Age intensified, coinciding with evidence for early ocean



Combining satellite geophysical data with continuous on-site measurements for monitoring the dynamic parameters of civil structures - Scientific Reports

n Nature

One key issue in the Structural Health Monitoring (SHM) of buildings is the influence of the soil on the dynamics of the system. The lack of accurate information on soil-structure interaction represents a source of



Risk of soil degradation and desertification in Europe's Mediterranean may be more serious than realized

 Phys

Europe's Mediterranean countries produce a significant portion of the world's wines, olives, nuts and tomatoes. But research shows that the region's farms and orchards are the most susceptible in Europe to soil

WHAT
IS

Soil pollu

CHEMICALS



PLASTIC
MULCH



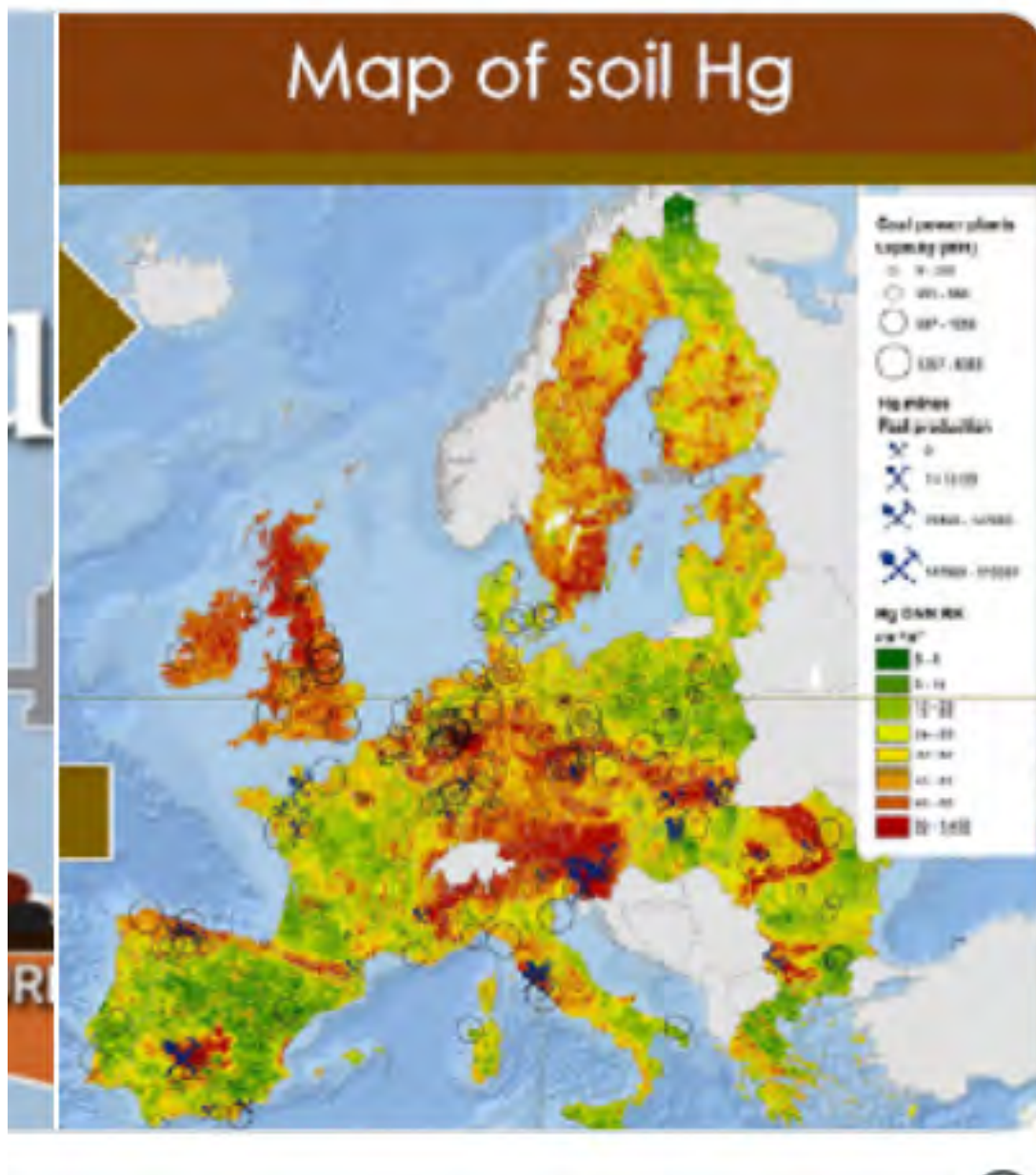
WASTE



MACHINERY



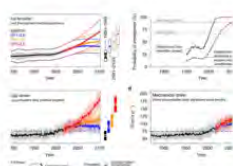
MANURE



Antarctic ice cores reveal Australian drought risk worse than thought

Phys

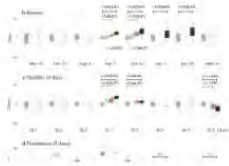
Antarctic ice core records have shown that eastern Australia's drought risk is greater than thought.



Increase in Arctic coastal erosion and its sensitivity to warming in the twenty-first century - Nature Climate Change

Nature

Coastal erosion in the Arctic is caused by permafrost thaw and wave abrasion enhanced by sea ice melt, both of which will increase under climate change. Projections of erosion rate across the Arctic indicate that



Anthropogenic warming disrupts intraseasonal monsoon stages and brings dry-get-wetter climate in future East Asia - npj Climate and Atmospheric Science

n Nature

East Asia will face a skewed monsoon cycle with soaring flood, drought, and weather whiplash risks in a warming climate. In our objective eight-intraseasonal-monsoon-stage framework, we uncover a 'dry-get-wetter'



Reduced tillage in organic farming affects soil organic carbon stocks in temperate Europe

Sciencedirect

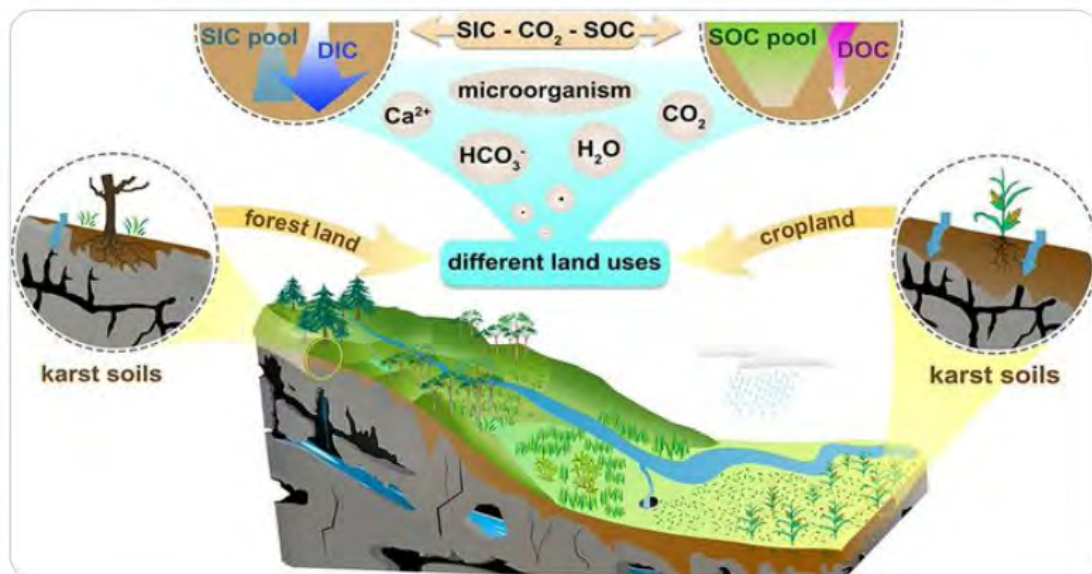
For decades, conservation tillage has been promoted as a measure to increase carbon stocks in arable soils. Since organic farming improves soil quality...



Influence of sampling design on landslide susceptibility modeling in lithologically heterogeneous areas - Scientific Reports

n Nature

This work aims at evaluating the sensitivity of landslide susceptibility mapping (LSM) to sampling design in lithologically-heterogeneous areas. We hypothesize that random sampling of the landslide absence data in



and UK (ca. 1/3 million ha). This takes into account the P removed by crop harvesting and the plant residues. For P removed by crop harvesting, we used 7 major categories of crops and 37 crops in more than 220 regions of EU and UK. The total P removal was about 2.55 million tonnes (Mt) (± 0.23 Mt), with crop harvesting having the larger contribution (ca. 94%) compared to the crop residues removal. The mean P removal by crop harvesting is $14 \text{ kg ha}^{-1} \text{ yr}^{-1}$. Data are available. <https://esdac.jrc.ec.europa.eu/themes/phosphorus-budget-topsoils>



Surface Water Assessment eNabler (SWAN)

The FOCUS landscape and mitigation report states that the SWAN tool can be utilised to implement mitigation of the spray drift and runoff routes of exposure to surface water, in STEP 4 FOCUS surface water calculations. The tool also facilitates FOCUS air recommendations on accounting for volatilisation, short range transport and deposition to surface water bodies for volatile compounds, needed when spray drift has been mitigated. SWAN 5.0.1 (build date October 2018) is now hosted and available to download via the surface water page of the ESDAC FOCUS website. This version of SWAN is the same as that which was previously distributed / available from the website of Tessella. <https://esdac.jrc.ec.europa.eu/projects/swan>



Joint PhD of JRC with Aarhus University

"Strategies to reduce greenhouse gas emissions from agricultural soils in Europe" (deadline for applications **15.3.2022**). The PhD candidate will integrate field studies outputs with large-scale process modelling to reach sound recommendations about GHG mitigation practices in agricultural soils at regional scale. This project will also shed light on the nitrogen losses and GHG emissions. The outcomes will contribute to the knowledge base being developed by the JRC's EU Soil Observatory and relevant policy areas addressing soil health and climate change.



More vacancies: <https://esdac.jrc.ec.europa.eu/vacancies>

Events – Vacancies.

In case you want to propose an event or a vacancy, please send the relevant information to the functional mailbox: ec-esdac@ec.europa.eu. We may publish them in ESDAC as part of the activities of the European Soil Observatory (EUSO)

<https://esdac.jrc.ec.europa.eu/vacancies> – <https://esdac.jrc.ec.europa.eu/event/FutureEvents>



Rainstorms erosivity indexes

Heavy rainstorms play a central role in the water soil erosion processes. In a recent [publication](#), we provide the spatiotemporal distribution of more than 300,000 erosive events measured at 1181 locations as part of the Rainfall Erosivity Database at European Scale (REDES) database. Rainfall erosive events are statistically investigated through the Lorenz curve and derived coefficients such as the Gini coefficient (G). In Europe, on average 11% of all erosive events contribute to 50% of the total rainfall erosivity. Data ("Rainstorm erosivity indexes") are available with all erosivity datasets <https://esdac.jrc.ec.europa.eu/content/rainfall-erosivity-european-union-and-switzerland>



More Details

Download the ESDAC Newsletter: [PDF Format](#). Feedback: panos.panagos@ec.europa.eu



2022 JANUARY | Soil Care Network

Soil Care Network

The Soil Care Network is an interdisciplinary, global community of scholars and practitioners animated by the love of, fascination with, and dedication to soils.



EFSA Seconded National Experts | EFSA European Food Safety Authority, Parma, Italy

researchgate.net

Are you a qualified civil servant looking for a new professional challenge in a stimulating and dynamic EU Agency? Do you want to apply your skills and knowledge to contribute to the achievement of EFSA's objectives



Working opportunities at the European Joint Programme Soil | Open positions

ejpsoil.eu



Vacancy: Sustainable Land Management Project Coordinator | ISRIC. Wageningen, The Netherlands

www.isric.org

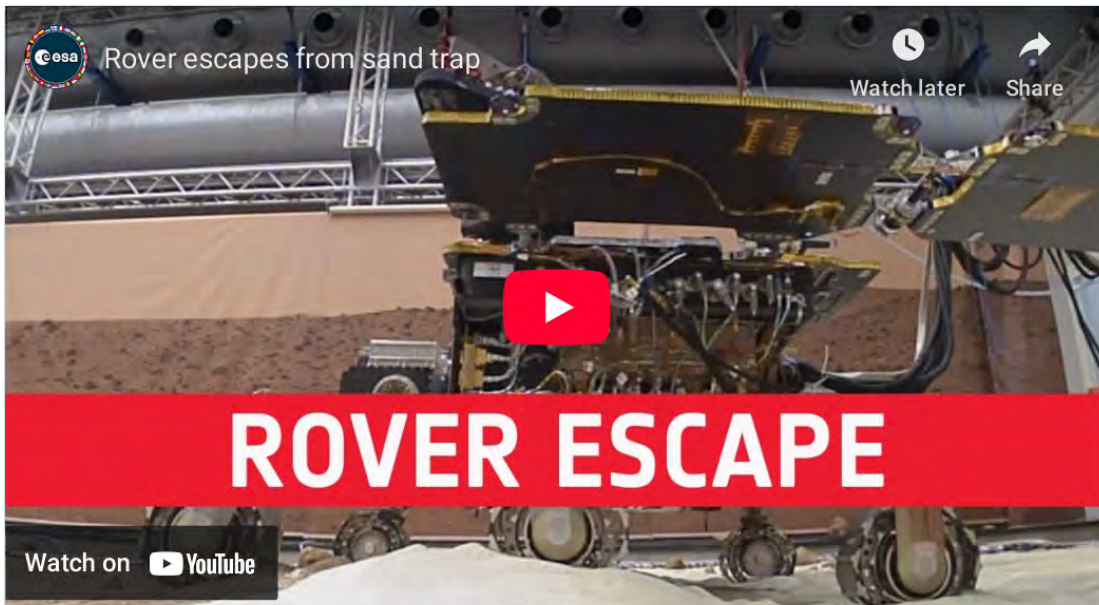
ISRIC – World Soil Information has a vacancy for: Sustainable Land Management Project Coordinator.



Save Soil: A Movement that Began 24 Years Ago | Sadhguru

 YouTube

Save Soil is a movement that has germinated from a seed that was planted 24 years ago by Sadhguru. In 1998, some environmental agencies predicted that by 202...



Rover escapes from sand trap

 YouTube

The ExoMars rover used in the Earth-based Mars Terrain Simulator makes escaping from a sand trap look easy in this exercise. The rover initially has its fron...



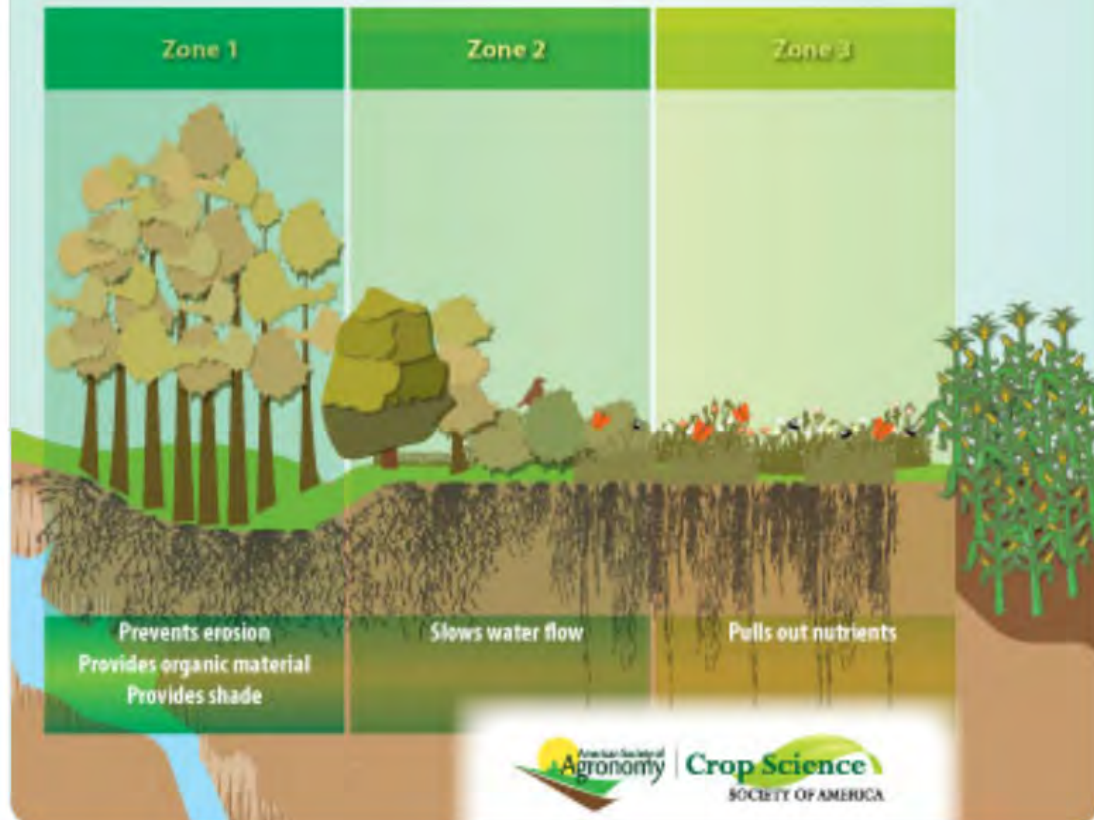
This is a lung.



This is a tree.



Buffer Strips



5 drivers of soil biodiversity loss



Food and Agriculture
Organization of the
United Nations



An **increase of 1%** in organic matter
in the top six inches of soil can increase
soil's water-holding capacity by

20,000
gallons
per acre

(USDA NRCS, 2016)



Number closed in Bologna (Italy) Feb. 22nd, 2022. 09:47 PM (CET)
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