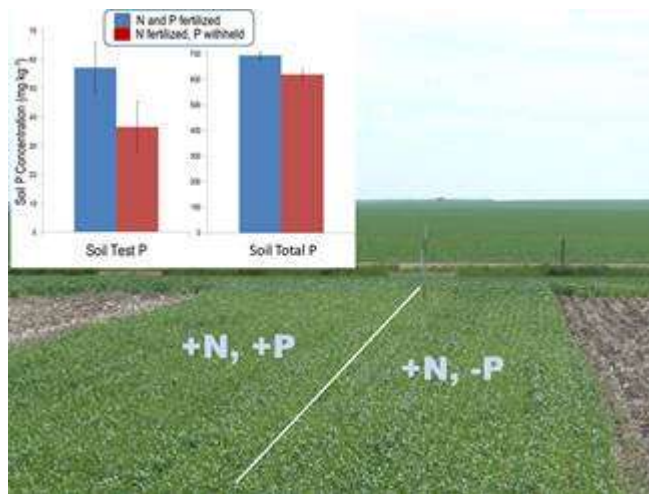




Bringing high tech to soil research

19 Feb 2015



Understanding legacy phosphorus (P) build-up and draw-down from long-term fertilization is essential for effective P management. Using replicated plots from Saskatchewan, Canada, with P fertilization from 1967 to 1995 followed by either P fertilization or P cessation (1995–2010), soil P was characterized in surface and subsurface layers using sequential fractionation, P K-edge X-ray absorption near-edge structure (XANES) and solution ³¹P nuclear magnetic resonance (P NMR) spectroscopy

Read more at: <http://phys.org/news/2015-02-high-tech-soil.html#jCp> 2015 is the International Year of the Soils. Healthy soils are vital to sustainable food systems, clean lakes, verdant forests, and the health of our planet. In honour of the occasion, we offer you a profile of a scientist committed to studying the key elements in our soils.

Read more at: <http://phys.org/news/2015-02-high-tech-soil.html#iCp>

Study shows grazing cover crops doesn't damage soils

Dennis O'Brien, USDA Southeast Farm Press

Feb 13, 2015

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- Relatively low-level of grazing doesn't significantly affect the amount of organic matter in soil and doesn't compact the soil.
- Cover crops provided high-quality forage.

RELATED MEDIA



Silvopasture: Livestock, forage and trees grow well together

Look for periods of volatility in 2015 beef cattle market

Cattle rustlers strike in Georgia



A cow and calf grazing on a summer cover crop of pearl millet. ARS scientists conducted studies on cover crops and cattle grazing and found that moderate grazing does not significantly affect the amount of organic matter in the soil.

USDA-ARS

A U.S. Department of Agriculture scientist in North Carolina has found a way to encourage more growers to use cover crops in the Southeastern United States—allow cattle to graze on them.

<http://southeastfarmpress.com/livestock/study-shows-grazing-cover-crops-doesn-t-damage-soils>

Soil health essential for global food security

RODERICK MAKIM

20 Feb, 2015 03:11 PM

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We'll have a security problem that will make ISIS look like a child's tea party

Michael Jeffrey with Paul Dellow, president of NSW Farm Writers Association.

POOR soils and food shortages in developing nations could cause a security issue that would "make ISIS look like a child's tea party", according to former Governor General Michael Jeffrey.

A veteran of the Australian army, Mr Jeffrey spoke to NSW Farm Writers today in his capacity as the nation's first soil health advocate.

Using the examples of declining soil quality and arable land and rising global population, Mr Jeffrey said looking after soil health to feed the world was one of the biggest issues currently facing humanity.

There were already 97,000 children starving to death every day around

LATEST

Producers call for a 'fair go'

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Shutdown highlights market concerns

WCB to buy Lion cheese

<http://www.theland.com.au/news/agriculture/general/news/soil-health-essential-for-global-food-security/2724274.aspx>

Societal value of soil carbon

Rattan Lal

Agriculture is an engine of economic development and is integral to any agenda for addressing global issues of the twenty-first century (e.g., food and nutritional security, climate change, growing energy and water demands, and biodiversity). By 2050, there will be an additional global food demand for cereal production by 1 billion $t\ yr^{-1}$ (1.1 billion $tn\ yr^{-1}$) from 2.1 to 3.0 billion t (2.3 to 3.3 billion tn), and 200 million $t\ yr^{-1}$ (220 million $tn\ yr^{-1}$) of meat up to 470 million $t\ yr^{-1}$ (518 million $tn\ yr^{-1}$) (FAO 2009; Alexandros and Bruinsma 2012). In addition, President Obama announced on June 2, 2014, that the US Environmental Protection Agency would cut carbon (C) emissions from the US power sector by up to 30% and soot and smog pollution by 25% by 2030 relative to 2005 levels (Küntisch 2014). There will also be an additional water demand of 40% by 2030, in which soil-water storage (e.g., green water) will play a crucial role (Rosegrant et al. 2002). Indeed, major concerns of the modern civilization, especially peace and tranquility (Lal 2014), are intricately con-

Table 1

Comparison of environmental indicators in 1992 and 2014 (Brown 2010; Le Quere et al. 2013; Houghton 2003; WMO 2013; IPCC 1990, 2013; UN 2014; FAO 2011, 2014; IFDC 2010; World Bank 2014; WHO/UNICEF 2014).

Parameters	1992	2014
Total population (10^9)	5.49	7.24
Urban population (10^9)	2.57	3.88
Energy use (EJ)	365	600
Fossil fuel emission (Pg C)	6.2	10.1
Emission from tropical deforestation (Pg C)	2.18	0.8
Water use (km^3)	0.56	0.70
Fertilizer use ($10^6\ Mg$)	125	190
Per capita arable land (ha)	0.26	0.19
Atmospheric carbon dioxide concentration (ppm)	354	400
Atmospheric methane concentration (ppm)	1,720	1,831
Atmospheric nitrous oxide concentration (ppm)	310	327
Per capita grain production (kg)	359	344
Poverty (10^9 ; <US\$1.25 d^{-1})	1.9	1.5
Ethanol production ($10^9\ L$)	17	120
Hunger prone population (10^9)	1,000	842
Lack of clean drinking water (people 10^9)	1.32	0.81
Lack of access to sanitation (people 10^9)	2.90	2.60

adaptation. The inherent and societal value of SOC is also assessed.

SOIL RESILIENCE VERSUS

(table 1). For example, percentage increase of some environmentally sensitive parameters in 2014 compared with their value in 1992 is 32% for total population, 39% for

Groundcover

Good rainfalls in north eastern **New South Wales** (Figure 4) have not led to any improvement in groundcover yet. If the rainfall is sustained, we expect to see improvements in the January groundcover.

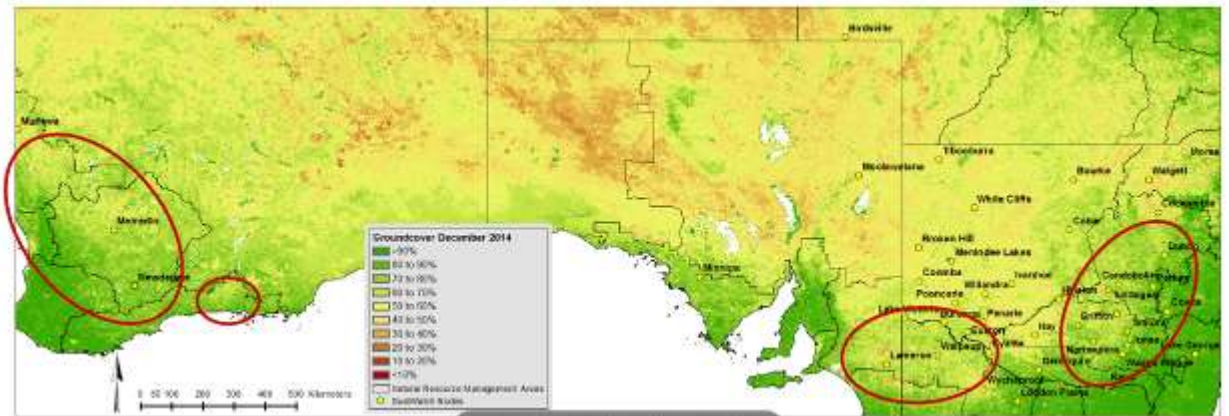
The groundcover in inland Australia has remained almost unchanged apart from isolated fire scars emerging. They are particularly visible in **Western Australia**.

The largest decline in groundcover between September and

December 2014 (red circles in Figure 2) occurred in areas that had good (about 50% = yellow colours) or better (>60% = green colours) groundcover in December 2014. This groundcover change is predominantly due to grazing pressure and harvest activities.

Some areas of the Mallee in western **Victoria** with low ground cover started to emit dust in high wind conditions experienced on the 16th and 22nd December when wind speeds exceeded 40 km/h.

Figure 2. Percentage groundcover for December 2014 as determined from MODIS data using the method published by J. Guerschman et al in 2009



<http://www.environment.nsw.gov.au/resources/dustwatch/140878DWNL.pdf>

Personal care product chemicals found in Antarctica

27 Feb 2015 by [Bob Yirka](#)



Image: National Science Foundation

A team of researchers with the Spanish Council for Scientific Research has found small amounts of cyclic volatile methylsiloxanes in soil and plant samples and also in krill and phytoplankton specimens, all taken from various sites in Antarctica. In their paper published in *Environmental Science and Technology*, the team describes their research and offers a possible explanation for how the chemicals found their way to such a remote part of the planet.

Read more at: <http://phys.org/news/2015-02-personal-product-chemicals-antarctica.html#jCp>

Environment: Can adaptive grazing techniques help rebuild soils and sequester carbon?

Posted on 16 February 2015 by Bob Berwyn



Adaptive grazing could have environmental benefits, researchers say. [*bberwyn photo.*](#)

Short-rotation pastures with long recovery time for fields may yield environmental benefits

Staff Report

FRISCO — While healthy forests are known to be important carbon sinks in the global atmospheric cycle, there's also a role for robust soils, according to a study team that's exploring whether new grazing management techniques could have long-term environmental benefits. <http://summitcountyvoice.com/2015/02/16/environment-can-adaptive-grazing-techniques-help-rebuild-soils-and-sequester-carbon/>

Getting better value from soils

GREGOR HEARD

27 Feb, 2015 04:00 AM

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WITH the price of cropping land soaring, farmers are increasingly looking to improve the productivity of the ground they already own.

A South Australian project is looking at ways farmers can achieve this and lower the amount of soil constraints they are confronted with.

Speaking at the Mallee Sustainable Farming (MSF) forum in Red Cliffs, Victoria, South Australian Research and Development Institute (SARDI) researcher Nigel Wilhelm said bettering Australia's often poor soils in cropping regions would be a big part in boosting productivity in the grains sector.

<http://www.theland.com.au/news/agriculture/cropping/general-news/getting-better-value-from-soils/2724588.aspx>

How to get healthy soil for happy plants

Natural biological controls are a gardener's new best friend



Branching out: mulching gives ailing oak trees a new lease of life Photo: Chris Fletcher / Alamy

By Bunny Guinness

10:24AM GMT 12 Feb 2015

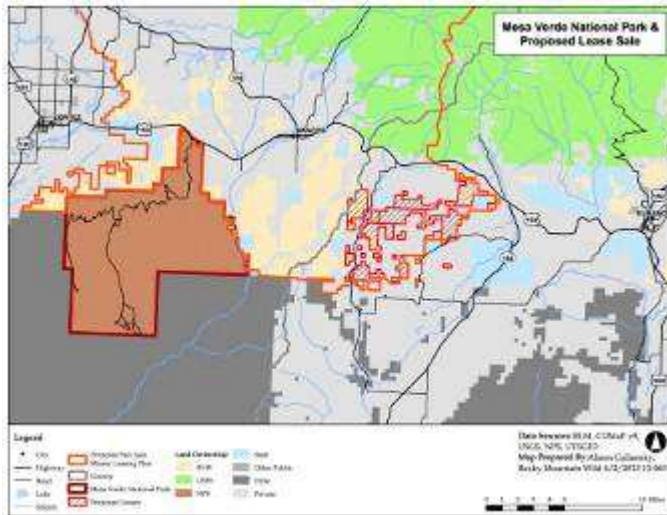
'Well, I think the answer lies in the soil.' This catchphrase from farmer Arthur Fallowfield (played by Kenneth Williams in Round the Horne) was played for laughs, but scientists are beginning to understand the huge significance of soil. As 2015 is the International Year of Soils, perhaps it is time to become more enlightened. Since the green revolution in agriculture, about 50 years ago, farmers have been adding increasing quantities of fertilisers and chemicals to crops, and yields have been soaring accordingly. Now, however, yields are flatlining and, in certain crops, even falling because our soils are becoming exhausted and polluted. Pesticides and fertilisers will only get you so far, and to date these have been the only approach readily and widely available.

<http://www.telegraph.co.uk/gardening/gardeningadvice/11396593/How-to-get-healthy-soil-for-happy-plants.html>

More fracking woes in southwest Colorado

Posted on 28 February 2015 by Bob Berwyn

BLM rejects request for orderly master leasing plan



The BLM's new management plan for the Tres Rios area is spurring criticism.

By Bob Berwyn

FRISCO — Residents and elected officials in southwest Colorado say a new management plan for a vast swath of public lands in the region favors oil and gas companies over community interests.

According to critics, the BLM Tres Rios land resource management plan would allow drilling near the edge of Mesa Verde National Park, adding to near-critical air pollution woes and disturbing important wildlife areas.

<http://summitcountyvoice.com/2015/02/28/more-fracking-woes-in-southwest-colorado/>

Hydro's majestic rise

ANDREW MARSHALL

28 Feb, 2015 04:00 AM

Comments

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S



CONTROL and efficiency will give hydroponic production the edge over traditional farming this year, says a new report.

IBISWorld's industry analysis says a key factor in the 4.7 per cent growth of hydroponics in the next five years is its appeal as a more efficient labour, fertiliser and crop protection inputs user.

This is courtesy of the industry's ability to better control and manage the farm environment.

"Hydroponic ventures required just 20pc of the water used in traditional soil-grown crop systems"

<http://www.theland.com.au/news/agriculture/agribusiness/general-news/hydros-majestic-rise/2724530.aspx>

Inside Texas Tech: Researchers Focus on Soil, Celebration of Soil

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By ABIGAIL ARROYOS



The United Nations designated 2015 as the International Year of Soils.
Credit: United Soybean Board / Creative Commons



Soil researchers have a PSA for the wider, non-soil researching world: soil is not the same as dirt. Dirt is simply soil that has been misplaced from its natural setting, like the stuff tracked into your house and makes a mess.

<http://kttz.org/post/inside-texas-tech-researchers-focus-soil-celebration-soil>

Managing soils in SD



19 February 2015 8:00 am •

A soil has been described as a porous medium consisting of minerals, water, gases, organic matter, and microorganisms. The largest component of soil is the mineral portion, which makes up approximately 45% to 49% of the volume. Some of the mineral portion consists of primary mineral particles. These are the sand and silt particles.

http://www.tristateneighbor.com/news/crop/managing-soils-in-sd/article_298030e8-b795-11e4-be16-13592b1c9170.html

Battle for Liverpool Plains: Chinese coal project tears at fabric of rural NSW

Agricultural produce from some of the richest soil in Australia is in high demand in China, but so is its coal. With a federal verdict imminent on the proposed Shenhua open-cut mine, farmers and miners are divided over the region's future



Farmer John Hamparsum in front of an irrigation ditch overlooking the black-soil plains on his farm. His family farm abuts the Shenhua site. Photographs: www.sallyaldenphotography.com

John Hamparsum squats down, scoops up a handful of earth and holds it out for me to sniff.

“You can smell fertility, smell living organisms. It’s like really good compost,” he says.

We’re standing in a field of ripening sorghum on John’s property on the Liverpool Plains in north-western [New South Wales](#). The black soil whose bouquet he is inviting me to savour is some of the richest in Australia.

<http://www.theguardian.com/environment/2015/feb/26/battle-for-liverpool-plains-chinese-coal-project-tears-at-fabric-of-rural-nsw>

Plants found to alter soil types

23 Feb 2015 by Jo Fulwood



"We have a few examples that we are certain of, such as some Mallee, Morel (pictured) and the Banksia species," he says. Credit: Scott Darbey

Exciting research has revealed some plants have the ability to alter soil types, suggesting opportunities may exist to re-engineer WA's hostile soils to better suit agricultural purposes.

Read more at: <http://phys.org/news/2015-02-soil.html#jCp>

Protecting peat soils

Friday, 13 February 2015, 2:53 pm

Column: Bala Tikkisetty Waikato Regional Council

Protecting peat soils

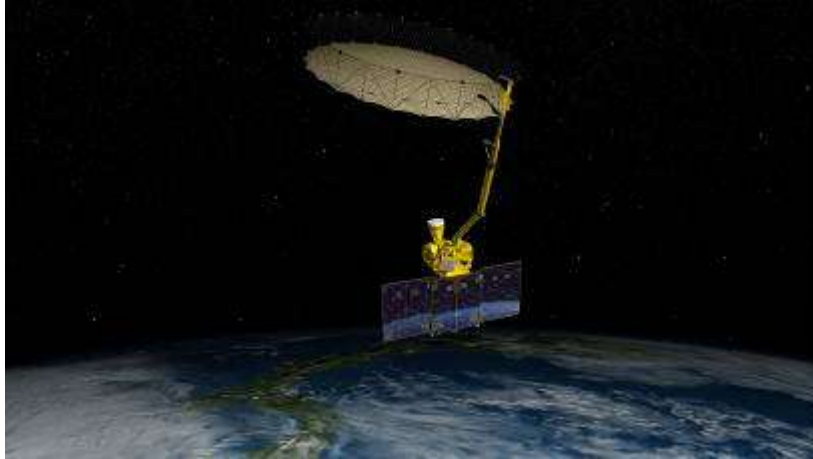
Bala Tikkisetty

Peat soils, in their natural state, have high organic matter content, low nutrient levels and water table fluctuations, so they behave differently from mineral soils in terms of nutrient transformations and cycling.

There are different types of peat soils, such as bog peat and swamp peat. Bog peats have low nutrients with usually 35-50 per cent carbon content, whereas swamp peats have higher mineral content with 15-40 per cent carbon. Farm management becomes particularly difficult if different types of peat soil are side by side or layered on top of each other. <http://www.scoop.co.nz/stories/SC1502/S00024/protecting-peat-soils.htm>

SMAP satellite extends 5-meter reflector boom

27 Feb 2015 by Alan Buis



ASA's Soil Moisture Active Passive (SMAP) mission will produce high-resolution global maps of soil moisture to track water availability around our planet and guide policy decisions. Credit: NASA/JPL-Caltech

Like a cowboy at a rodeo, NASA's newest Earth-observing satellite, the Soil Moisture Active Passive (SMAP), has triumphantly raised its "arm" and unfurled a huge golden "lasso" (antenna) that it will soon spin up to rope the best soil moisture maps ever obtained from space.

Read more at: <http://phys.org/news/2015-02-smap-satellite-meter-reflector-boom.html#jCp>

Speakers share dirty secrets of successful soil

Story Comments Print Font Size

Posted: Friday, February 13, 2015 11:31 am

Larry Meyer | The Argus Observer |
0 comments



Posted on Feb 13, 2015
by **Larry Meyer**

ONTARIO—Soil degradation and dysfunctional soils were major topics during Thursday's sixth annual Soil Health Symposium and Workshop, which drew at least 200 people who packed the west conference area of the Four Rivers Cultural Center.

Participants came from as far away as Utah, Washington, eastern Oregon and eastern Idaho, as well people from around the Treasure Valley, said Johna Gabiola with Payette Soil and Water Conservation District.

Larry Meyer | The Argus Observer

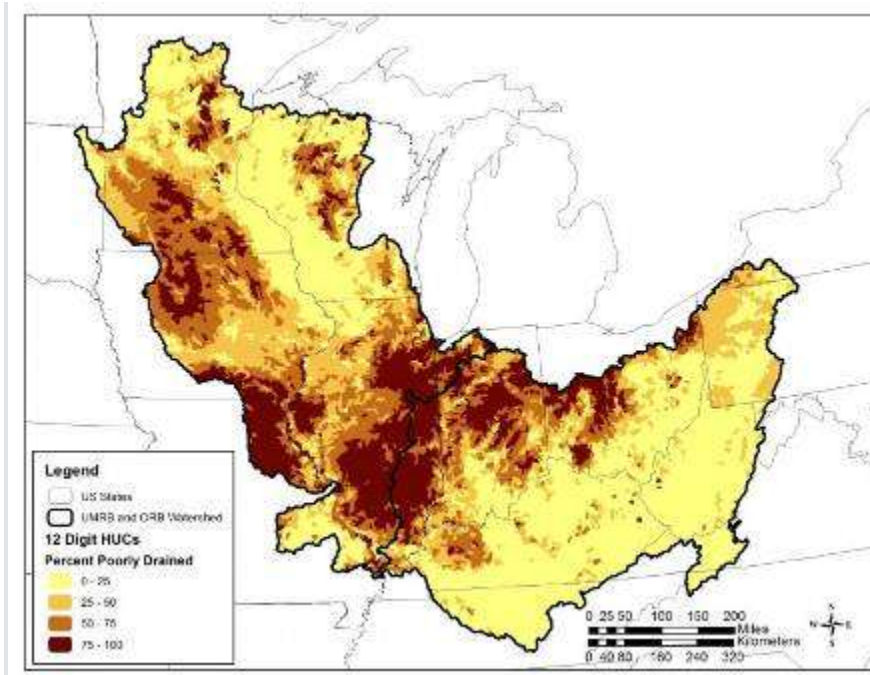
Char Hennepeler, a Payette County tree

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http://www.argusobserver.com/news/speakers-share-dirty-secrets-of-successful-soil/article_88c4cdf6-b3ae-11e4-a936-7f367bc97683.html

Farmers can better prevent nutrient runoff based on land characteristics

Doing more to keep farm runoff out of the country's waterways can start with a few key questions about what the land looks like, researchers say after creating a comprehensive nutrient runoff mitigation guide for farmland in both the Ohio and Upper Mississippi River Basins.



This map shows how poorly drained the land in the study's observed watersheds area. The darker colors indicate that there are more poorly drained fields in a region, meaning that water leaving farm fields passes easily into the local watershed without being filtered, taking more nutrients with it.

Credit: Image courtesy of Iowa Geological Survey

Farmers on a quest to keep more fertilizer on their fields--and out of Iowa's waterways--may have an easier time finding a solution, thanks to new research from the University of Iowa.

Journal Reference:

1. Keith E. Schilling, Calvin F. Wolter, Eileen McLellan. **Agro-hydrologic Landscapes in the Upper Mississippi and Ohio River Basins.** *Environmental Management*, 2014; DOI: [10.1007/s00267-014-0420-x](https://doi.org/10.1007/s00267-014-0420-x)

<http://www.sciencedaily.com/releases/2015/02/150218165858.htm>



Study Shows No Damage to Soils from Grazing Cover Crops

12 February 2015

US - A US Department of Agriculture (USDA) scientist in North Carolina has found a way to encourage more growers to use cover crops in the Southeastern United States—allow cattle to graze on them.



For years, some growers in the Southeast have used cover crops to reduce soil erosion, boost organic matter, and keep more moisture in soil. Combined with no-till production, cover crops are credited with sequestering more carbon in soil so that less of it is released as a greenhouse gas.

<http://www.thecattlesite.com/news/47455/study-shows-no-damage-to-soils-from-grazing-cover-crops/>

Soil: not a four letter word

Wednesday, 11 February 2015 14:01



Photo: © CPRE

The word soil has many connotations. Unfortunately, quite a few are bad.

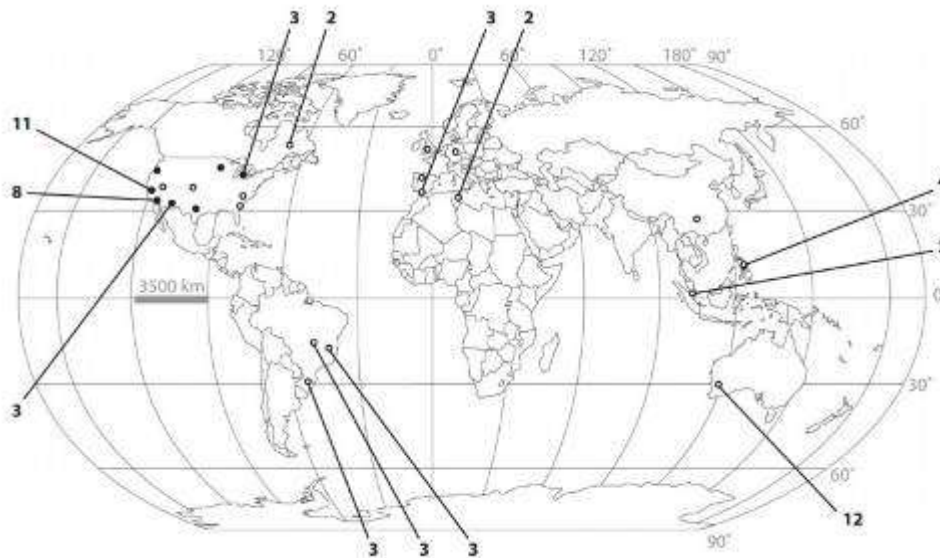
We talk of 'soiled' sheets, of night 'soil'.

The American version isn't much better. They call it 'dirt' which recalls grime and smut. It might be one reason why we consistently fail to appreciate how precious and extraordinary soil is. As a consequence, we give poor protection to this fundamental

natural asset. <http://www.cpre.org.uk/magazine/opinion/item/3854-soil-is-not-a-four-letter-word>

Paleoclimate, proxies, paleosols, and precipitation: A look to the future

Precipitation reconstructions are essential for predicting impacts of future climate change and preparing for potential changes in terrestrial environmental conditions. Reliable proxy records of paleoprecipitation, especially from past warm periods, are a valuable tool for assessing and modeling future soil and plant moisture and local water availability. However, current terrestrial proxies are limited in their applications, and as a result, a wide range of paleoenvironments are underrepresented in the geologic record.



Precipitation reconstructions are essential for predicting impacts of future climate change and preparing for potential changes in terrestrial environmental conditions, such as shifting amounts of regional rainfall, which in turn impact water resource availability and crop growth patterns. Reliable proxy records of paleoprecipitation, especially from past warm periods, are a valuable tool for assessing and modeling future soil and plant moisture and local water availability. However, current terrestrial proxies are limited in their applications, and as a result, a wide range of paleoenvironments are underrepresented in the geologic record.

Journal Reference:

1. E. G. Hyland, N. D. Sheldon, R. Van der Voo, C. Badgley, A. Abrajevitch. **A new paleoprecipitation proxy based on soil magnetic properties: Implications for expanding paleoclimate reconstructions.** *Geological Society of America Bulletin*, 2015; DOI: [10.1130/B31207.1](https://doi.org/10.1130/B31207.1)

<http://www.sciencedaily.com/releases/2015/02/150220133348.htm>

FY2015 Gridded Soil Survey

The FY2015 Gridded Soil Survey Geographic ([gSSURGO](#)) Database was released on 23 February 2015.

The screenshot shows the homepage of the Geospatial Data Gateway (GDG). At the top, the USDA logo and the text "United States Department of Agriculture Natural Resources Conservation Service" are visible. Below this is the main heading "GEOSPATIAL DATA GATEWAY" in large, bold letters. A navigation bar includes links for Home, Login, Check Order, Status Maps, News, Data Policy, FAQ, Help, Admin, and Contact Us. The main content area features a search bar, a "Welcome to GDG" banner with a landscape image, and a "System Status" section. A sidebar on the left lists various data categories under "Browse by Subject", including Natural Resources Conservation Service, Farm Service Agency, Rural Development, National Geospatial Center of Excellence (NGCE), Aerial Photography Field Office (APFO), Web Soil Survey, FDOTS, Geo Data, GIS, USGS Maps, Imagery and Publications, National Atlas, National Map Viewer 2.0, US Census Bureau Geography, and Download TIGER/Line Shapefiles. A "GET DATA" button is prominently displayed. On the right, there is a "I Want To..." section with a list of options: Order by County/Countries, Order by State, Order by Place, Order by Bounding Rectangle (enter Latitude and Longitude), Order by Interactive Map - Custom Area Of Interest (AOI), Find Available Data for the U.S., and Check Status of an Existing Order.

<http://datagateway.nrcs.usda.gov/>

What stories does the soil tell about poverty and inequality in Mindanao?

Posted by [Daniel Morchain](#) Global Adviser, Climate Change Adaptation

10th Feb 2015



On the island of Mindanao in the Philippines, land degradation is a major problem affecting small-scale subsistence farmers and large-scale producers alike. Daniel Morchain looks at the obstacles to sustainable land management in Mindanao, and makes recommendations for a long-term soil conservation strategy that is fair and sustainable, and which will help to address the issue of poverty on the island.

<http://policy-practice.oxfam.org.uk/blog/2015/02/mindanao-sustainable-land-management>

Enhancing microbial activity contributes to the remediation of soil and groundwater contaminated with pesticides

The addition of carbon, which is required as a nutrient by the microorganisms in soil and groundwater, was found to be the most promising remediation method in the remediation of soil and groundwater contaminated with the pesticide atrazine. There is a demand for the remediation method, as atrazine is the most common pollutant found in groundwater in Finland.



Researcher Aura Nousiainen working in Aurangabad India (2009).

Credit: Kirsten Jørgensen

The addition of carbon, which is required as a nutrient by the microorganisms in soil and groundwater, was found to be the most promising remediation method in the remediation of soil and groundwater contaminated with the pesticide atrazine. This conclusion is reached in Aura Nousiainen's doctoral dissertation, which will be presented for public examination at the University of Helsinki on Friday 13

February 2015. There is a demand for the remediation method, as atrazine is the most common pollutant found in groundwater in Finland.

<http://www.sciencedaily.com/releases/2015/02/150211083208.htm>

Long-term nitrogen fertilizer use disrupts plant-microbe mutualisms

When exposed to nitrogen fertilizer over a period of years, nitrogen-fixing bacteria called rhizobia evolve to become less beneficial to legumes -- the plants they normally serve, researchers report in a new study.



Soil microbes known as rhizobia supply much-needed nitrogen to legumes such as clover (*Trifolium* species). In return, legumes shelter the rhizobia in nodules on their roots and provide them with carbon.

Credit: Julie McMahon

When exposed to nitrogen fertilizer over a period of years, nitrogen-fixing bacteria called rhizobia evolve to become less beneficial to legumes -- the plants they normally serve, researchers report in a new study.

Journal Reference:

1. Dylan J. Weese, Katy D. Heath, Bryn T. M. Dentinger, Jennifer A. Lau. **Long-term nitrogen addition causes the evolution of less-cooperative mutualists.** *Evolution*, 2015; DOI: [10.1111/evo.12594](https://doi.org/10.1111/evo.12594)

<http://www.sciencedaily.com/releases/2015/02/150223142254.htm>

Soils support urban life



2015 is the Year of Soil

The Soil Science Society of America is coordinating a series of activities throughout 2015, International Year of Soil, to educate the public about the importance of soil. February's theme is "Soils Support Urban Life."

In the United States, more than 80 percent of the population lives in cities or suburbs. While the downtown areas of cities are covered with asphalt and concrete, there are still lawns, trees, gardens and parks. Under all this city space, even under the concrete, is soil.

http://www.agrview.com/briefs/regional/soils-support-urban-life/article_d2022641-7168-55b6-870c-

Hitting breaks good for Mallee crops

GREGOR HEARD

01 Mar, 2015 04:00 AM

Comments 1 Share 0 Tweet



The aim of the project was to find out whether break crops had a fit in Mallee systems

Agronomist Michael Moodie.

THE benefits of a break from wheat in low rainfall Mallee environments has been proven in a joint Grain Research and Development Corporation (GRDC) and Mallee Sustainable Farming (MSF) crop sequencing trial.

Michael Moodie, Moodie Agronomy, spoke at last week's Mallee Sustainable Farming forum in Red Cliffs, Victoria, on the project, which has found continuous wheat is in the lower end of gross returns in a wide range of rotations tested.

Mr Moodie said the sequencing trial, conducted on a paddock at Mildura, Victoria, showed there were definite merits in break crops.

RELATED

Aerobic cropping good fit

AGT enters barley space

Getting better value from soils

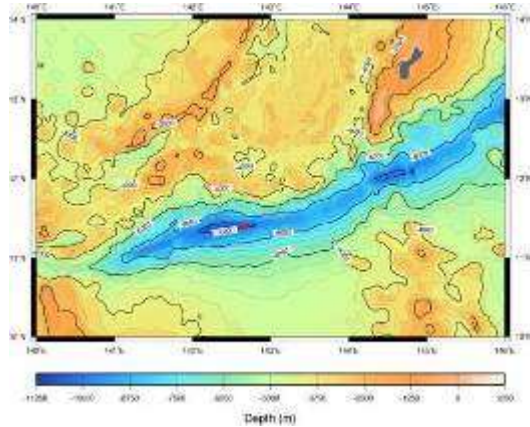
Poll: Will clearer labelling sell more Australian-grown

[1dda0510bd47.html](http://www.theland.com.au/news/agriculture/cropping/general-news/hitting-breaks-good-for-mallee-crops/2724587.aspx)

<http://www.theland.com.au/news/agriculture/cropping/general-news/hitting-breaks-good-for-mallee-crops/2724587.aspx>

Remotely operated vehicle finds heterotrophs abundant in deepest part of the ocean

26 Feb 2015 by [Bob Yirka](#)



The Challenger Deep is the deepest canyon in the oceans. The red circle shows the sampling location. Credit: JAMSTEC

A team of researchers with ties to several institutions in Japan has found an abundance of microscopic bacteria known as heterotrophs living on or near the ocean floor in the deepest part of the Mariana Trench. In their paper published in *Proceedings of the National Academy of Sciences*, the team describes their expedition work and what they found using a remotely operated vehicle (ROV).

Read more at: <http://phys.org/news/2015-02-remotely-vehicle-heterotrophs-abundant-deepest.html#jCp>

Banksias differ on resilience to climate change

27 Feb 2015 by Shannon Verhagen



[Enlarge](#)

The inflorescence of *B.coccinea* injects some colour into the landscape. Credit: Dr Anne Cochrane

Research into the germination requirements of four Banksia species (Proteaceae) endemic to the South West Australian Floristic Region (SWAFR) has found certain species may be more vulnerable to climate change than others.

Read more at: <http://phys.org/news/2015-02-banksias-differ-resilience-climate.html#jCp>

Organic farmers of the Pacific to support 2015 Year of Soils

By [Press Release](#)

Recognizing that soil is one of the essential elements for life, along with water, air and sunlight, organic farmers across the Pacific region will be actively supporting the 2015 United Nations International Year of Soils.

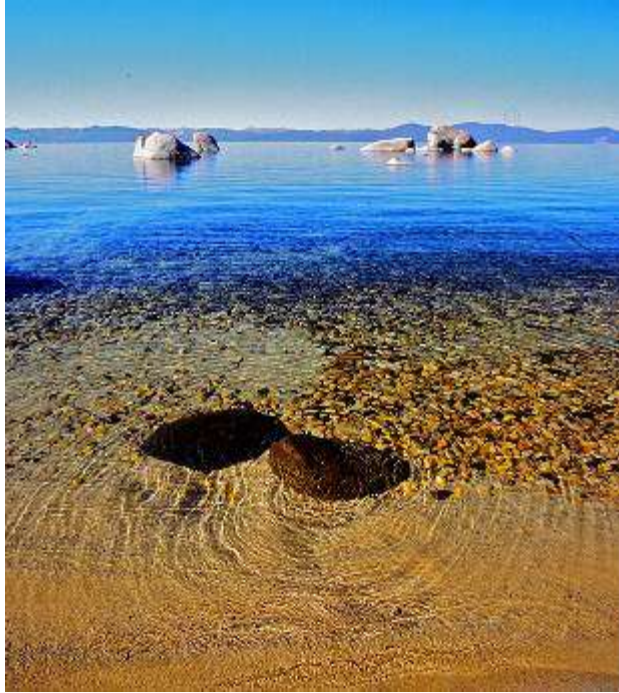
Through the Pacific Organic and Ethical Trade Community (POETCom), organic farmers and the Secretariat of the Pacific Community (SPC) will be raising the awareness of civil society and decision-makers about the fundamental role of soils for human life.

“Soil isn’t something people think about a lot, but it’s the basis for our lives on this planet, from food to housing to clean water,” the POETCom coordinator, Karen Mapusua, said.

<http://www.saipantribune.com/index.php/organic-farmers-pacific-support-2015-year-soils/>

How nitrogen is recycled in the Lake Tahoe ecosystem's food web

27 Feb 2015



University of California, San Diego Shore of Lake Tahoe and its blue water. Credit: Brant Allen/UC Davis, Tahoe Environmental Research Center

A Scripps Institution of Oceanography-led study on how natural and man-made sources of nitrogen are recycled through the Lake Tahoe ecosystem provides new information on how global change may affect the iconic blue lake.

Read more at: <http://phys.org/news/2015-02-nitrogen-recycled-lake-tahoe-ecosystem.html#jCp>

#39: Soil

The guest editor for this week's Food List is Gene Rosow, Director of [DIRT! The Movie](#)

“Soils are the source of all life on terrestrial earth. They provide a living matrix that regulates the cycles of every ecosystem on the planet. In consideration of this and the current state of our agricultural land, the UN denoted 2015 the International Year of Soils.

Healthy soils are central to every aspect of our lives: food, fiber, fuel, clean water, clean air, medicine, the quality of life in our cities and rural areas; and, increasingly we are finding out about the central role of soils in mitigating the dire effects of climate change.

When the Dust Bowl turned 3 million people into environmental refugees in the 1930s because of soil depletion, President Roosevelt pushed legislation through congress to create the Soil Conservation Service. When he signed the bill Roosevelt said, “The history of every nation is written in the way it cares for its soil.”

<http://www.lexiconofsustainability.com/soil/>

Map outlines western Oregon landslide risks from a subduction zone earthquake

27 Feb 2015



New landslide maps have been developed that will help the Oregon Department of Transportation determine which coastal roads and bridges in Oregon are most likely to be usable following a major subduction zone earthquake that is expected in the future of the Pacific Northwest.

Read more at: <http://phys.org/news/2015-02-outlines-western-oregon-landslide-subduction.html#jCp>

Drones with heat-tracking cameras used to monitor koala population

By Jessica van Vonderen

Updated Tue at 9:47pm

Queensland researchers are hoping drones will aid in the conservation of threatened species like koalas.

Traditionally, koalas were counted by people on the ground but now they can be tracked by robots from the air.

Researchers fitted drones, or unmanned aerial vehicles (UAVs), with infrared cameras to better detect the creatures.

QUT drone technician Gavin Broadbent said they



PHOTO: A thermal image of koala in tree taken by the Queensland University of Technology. (ABC TV News)

<http://www.abc.net.au/news/2015-02-24/drones-to-help-threatened-species-koalas-qut/6256558>

'Bunda' sale to CPC completed

ANDREW MARSHALL

23 Feb, 2015 11:00 AM

Comments 0 



THE UK-owned Consolidated Pastoral Company (CPC) has bought the Underwood family's Bunda Station in Northern Territory's Victoria River District, close to the West Australian border.

The 178,800ha breeding and growing station currently runs in more than 13,000 Brahman and Charbray infused cattle, including a 2000 head purebred Brahman stud.

CPC, Australia's biggest privately owned beef producer, believes Bunda Station has considerable development potential to run additional cattle which CPC will develop.

<http://www.theland.com.au/news/agriculture/cattle/beef/bunda-sale-to-cpc-completed/2724416.aspx>

Jordan, Israel sign deal to help save Dead Sea

26 Feb 2015



The drying shores of the Dead Sea, south of the Jordanian capital Amman, seen on November 9, 2009

Jordan and Israel signed a deal on Thursday to build a pipeline to link the Red Sea with the shrinking Dead Sea and combat regional water shortages.

Read more at: <http://phys.org/news/2015-02-jordan-israel-dead-sea.html#jCp>

Tracking poultry litter phosphorus: Threat of accumulation?

Understanding legacy phosphorus (P) build-up and draw-down from long-term fertilization is essential for effective P management. Using replicated plots from Saskatchewan, Canada, with P fertilization from 1967 to 1995 followed by either P fertilization or P cessation (1995–2010), soil P was characterized in surface and subsurface layers using sequential fractionation, P K-edge X-ray absorption near-edge structure (XANES) and solution ^{31}P nuclear magnetic resonance (P NMR) spectroscopy

Read more at: <http://phys.org/news/2015-02-high-tech-soil.html#jCp>

Antarctica's retreating ice may re-shape Earth

Feb 27, 2015 by Luis Andres Henao And Seth Borenstein



In this 22 Jan 2015 photo, a zodiac carrying a team of international scientists heads to Chile's station Bernardo O'Higgins, Antarctica. Water is eating away at the Antarctic ice, melting it where it hits the oceans. As the ice sheets slowly thaw, water pours into the sea, 130 billion tons of ice (118 billion metric tons) per year for the past decade, according to NASA satellite calculations. (AP Photo/Natacha Pisarenko)

Read more at: <http://phys.org/news/2015-02-antarctica-retreating-ice-re-shape-earth.html#jCp> (AP)—From the ground in this extreme northern part of Antarctica, spectacularly white and blinding ice seems to extend forever. What can't be seen is the battle raging underfoot to re-shape Earth.

Read more at: <http://phys.org/news/2015-02-antarctica-retreating-ice-re-shape-earth.html#jCp>

"There has come a time when we can no longer remain silent but must speak up for our country which is being sold, abused, mined, depleted, drained, overworked, over-loved, its plants and animals becoming endangered and exterminated faster than we can renew them. Our country is silent, so we must speak and act to save it."

DI MORRISSEY, The Silent Country