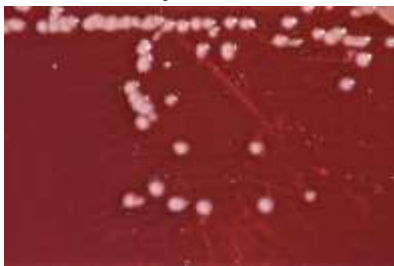




## Study shows manure from cows not given antibiotics still causes increase in resistant bacteria in soil

7 Oct 2014 by [Bob Yirka](#)



*Pseudomonas aeruginosa* bacterial culture on an Xylose Lysine Sodium Deoxycholate (XLD) agar plate. Credit: CDC/public domain

(Phys.org) —A team of researchers working out of Yale University has found that soil treated with cow manure from cows that never received antibiotics, still had more resistant bacteria in it than soil treated with nonorganic fertilizer. In their paper published in *Proceedings of the National Academy of Sciences*, the team describes their study and offers some theories regarding their results.

Read more at: <http://phys.org/news/2014-10-manure-cows-antibiotics-resistant-bacteria.html#jCp>

## Truffles take hold on local soils

JEANETTE SEVERS

06 Oct, 2014 08:01 AM



Kaitlyn and Colin Carter with French black truffles harvested from the family's truffière at Gembrook. Mr Carter is leading research into the industry and has focussed on developing skills in tree propagation, certification and inoculation using truffle spores.

THE Victorian truffle industry has grown in the past decade, driven by the desire of farmers to understand the secrets to growing these fungi and the ability of small landholders to produce a crop.

While most truffle farms are still in their infancy as far as production goes, farmers' knowledge of growing the elusive truffle is increasing - mostly driven by need and industry investment into research and development.

<http://www.stockandland.com.au/news/agriculture/cropping/general-news/truffles-take-hold-on-local-soils/2714194.aspx>

## Microbes and Pathogen Genes Fill New York City Soil

By [Mark Fischetti](#) | 3 October 2014|



Noah Fierer collects soil samples in New York City's Central Park. Photo courtesy of Noah Fierer.

With all the attention to [the Ebola virus](#) and other pathogens floating around in bodily fluids and the air, we may not be aware that the dirt beneath our feet is home to thousands of [bacteria](#) and other microorganisms. Even the soil in New York City, which we might think is somewhat lifeless given the preponderance of concrete and pollution, is as full of life as soils in tropical rain forests and rich grasslands. It is also home to more pathogenic genes than any of those places.

Those surprising conclusions come from [a creative study](#) published this week in *Proceedings of the Royal Society B*. A team of scientists took soil samples at 596 sites across New York's famous (and large) Central Park—all in a single, 12-hour blitz. They brought their dirt back to the lab and analyzed the genetic makeup of every bit of lifelike material they could find. They uncovered an astounding 167,000 different kinds of bacteria, archaea (single-celled organisms that do not have cell nuclei) and eukaryotes (organisms whose cells contain

nuclei). <http://blogs.scientificamerican.com/observations/2014/10/03/microbes-and-pathogen-genes-fill-new-york-city-soil/>

## Soil Microbiome of Central Park

**Nearly 600 soil samples from New York City's famous park reveal that the urban environment harbors just as much biodiversity as natural ecosystems across the globe.**

By Jef Akst | 30 September 2014



Central Park in New York City FLICKR, KEVIN DOOLEY The soil of New York City's Central Park is bursting with biodiversity spanning all three domains of life, according to a study published today (October 1) in *Proceedings of the Royal Society B*. In fact, the urban environment harbored as many different microbial species as diverse biomes around the world, including the soils of the arctic, desert, and tropical locales.

"This is an excellent work [that] demonstrates the vast diversity of soil community, most of which remained undescribed," microbial ecologist [Brajesh Singh](#) of the University of Western Sydney in Australia wrote in an e-mail. "Interestingly they found that belowground diversity from urban and managed soils have similar diversity to some of known natural ecosystems, which indicate the high resilience of belowground diversity to anthropogenic pressures." <http://www.the-scientist.com/?articles.view/articleNo/41119/title/Soil-Microbiome-of-Central-Park/>

## Sowing winter herbage into light acidic soils at Coonabarabran

NSW Country Hour

By [Sally Bryant](#)



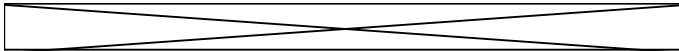
Updated Mon at 10:09am Mon 22 Sep 2014, 10:09am



**Photo:** [Agronomist and farmer Bob Freebairn \(Sally Bryant\)](#)

They used to call the farms east of Coonabarabran 'poverty blocks', where farmers struggled to make a living out of light acid soils.

The science of agronomy has moved on since those days and farmers now have a range of tools to use to make their soils more productive and their farming more sustainable.



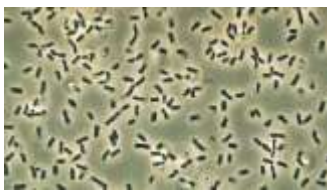
**Audio:** [Agronomist Bob Freebairn says acid soils can be much more productive with the right management\(ABC Rural\)](#)

<http://www.abc.net.au/news/2014-09-19/sowing-into-acid-soils-for-drought-preparedness/5755448>

## Incorporating Soil Microbes in Climate Change Models

**Without a solid understanding of how the soil microbiome contributes to atmospheric carbon, researchers are struggling to determine whether dirt-dwelling bacteria could impact—and be impacted by—climate change.**

By Joe Turner | 23 September 2014



*Bacillus subtilis* WIKIMEDIA COMMONS, KOOKABURRA An estimated [2,500 billion metric tons](#) of carbon is stored in the soil, so understanding interactions between the soil and the atmosphere is of critical importance to predicting the impacts of climate change. But determining the extent to which carbon dioxide-fixing microbes within the soil [can affect the environment](#)—and vice versa—has proved challenging. Two recent studies have highlighted the difficulties of understanding how soil microbes might respond to climate change and question whether climate models should account for these bugs. <http://www.the-scientist.com/?articles.view/articleNo/41078/title/Incorporating-Soil-Microbes-in-Climate-Change-Models/>

# Tapping into SoilWater app

MELODY LABINSKY

25 Sep, 2014 04:00 AM



University of Southern Queensland researcher Brett Robinson with the SoilWater app.

A TEAM of southern Queensland researchers are on a mission to make the once costly task of measuring soilwater relatively simple and inexpensive.

The SoilWater smartphone app is set to be released soon and uses weather information to estimate soilwater in broadacre cropping systems.

University of Southern Queensland researcher Brett Robinson said the app would simulate – quite accurately and with a lot of detail – what was happening with soilwater.

<http://www.stockandland.com.au/news/agriculture/general/news/tapping-into-soilwater-app/2713086.aspx>

## Bioenergy crops could store more carbon in soil

9 Oct 09, 2014 by Liz Ahlberg



Bioenergy crops like miscanthus, pictured here, can store more carbon in its soil than corn or soybean crops. Credit: L. Brian Stauffer

(Phys.org) —In addition to providing renewable energy, grass crops like switchgrass and miscanthus could store some of the carbon they pull from the atmosphere in the soil, according to a new study by University of Illinois researchers.

Read more at: <http://phys.org/news/2014-10-bioenergy-crops-carbon-soil.html#jCp>

## Soil pits offer look at three different soil conditions



### Saline Soil Pit

Sargent County Extension agent Melissa Blawat (with mic in hand) explains different parts of the soil profile in the saline soil pit.

4 October 2014 8:00 am • [By DALE HILDEBRANT Farm & Ranch Guide](#)

DELAMERE, N.D. - Those attending the recent Sargent County Soil Health Field Day were able to view, through the benefit of soil pits healthy, saline and sodic soils all within a half mile of each other. [http://www.farmandranchguide.com/news/crop/soil-pits-offer-look-at-three-different-soil-conditions/article\\_921a0eac-4a68-11e4-8875-bb8c3ad2239e.html](http://www.farmandranchguide.com/news/crop/soil-pits-offer-look-at-three-different-soil-conditions/article_921a0eac-4a68-11e4-8875-bb8c3ad2239e.html)

## Online tool for northern growers

JULES DIXON

08 Oct, 2014 06:00 PM



*GRDC actively listens to and values the feedback from growers and advisors*

FACILITATING communication between growers and the research community is a key priority for the Grains Research and Development Corporation's (GRDC) northern panel.

It's important on a number of fronts – it gives growers access to the latest research data and recommendations on industry best practice which, in turn, is critical to boosting yield potential and farm profitability.

Just as importantly, feedback from growers and advisors on agronomic and varietal issues helps develop a clear path forward for future research priorities and strategic...

<http://www.stockandland.com.au/news/agriculture/cropping/grains/online-tool-for-northern-growers/2714626.aspx>

## Microbial Autotrophy Plays Significant Role in the CO<sub>2</sub> Fixation in Surface Soils

2014-09-16

Global warming is believed to be closely associated with the increasing concentration of atmospheric CO<sub>2</sub>. Reducing CO<sub>2</sub> emission and enhancing soil carbon sequestration are promising ways to curb global warming. Microbially mediated atmospheric CO<sub>2</sub> reduction by autotrophic bacteria, which are estimated to be from 0.6 to 4.9 Pg C yr<sup>-1</sup>, contributes a substantial part to the sequestration of CO<sub>2</sub> in terrestrial ecosystems.

Autotrophic bacteria mainly fix CO<sub>2</sub> via the Calvin-Benson-Bassham (CBB) cycle. Ribulose-1,5-bisphosphate carboxylase oxygenase (RuBisCO), the enzyme catalyzes the rate-limiting step in CBB cycle, exists in four distinct holoenzyme forms (I, II, III, and IV). Form I RuBisCO, which is encoded by the *cbbL* gene, is the most abundant CO<sub>2</sub> fixation enzyme recognized in photoautotrophic and chemolithoautotrophic bacteria. Soils are complex systems that differ in their physical and chemical properties. The changes in physical and chemical conditions associated with soil depth, such as light, substrate and nutrient availability, may influence the community composition of autotrophic bacteria and the CO<sub>2</sub> fixation processed mediated by autotrophs.

[http://english.cas.cn/ST/RE/re\\_project/201409/t20140916\\_127966.shtml](http://english.cas.cn/ST/RE/re_project/201409/t20140916_127966.shtml)

## Getting deep with subsoil manuring

GREGOR HEARD

17 Sep, 2014 04:00 AM



*We believe the return on investment is there*

THE GOOD news for farmers contemplating subsoil manuring is that it definitely works, the bad news is that it still remains expensive.

That was the message from a talk at a Southern Farming Systems (SFS) field day at Hamilton, Victoria, last week.

The Venning family, west of Hamilton, has experimented with a trial block of subsoil manuring, using material from a feedlot down the road at Coleraine.

<http://www.stockandland.com.au/news/agriculture/cropping/grains/getting-deep-with-subsoil-manuring/2712214.aspx>

## Uncorked: Difference in soil, elevation produces two distinct wines

Published: Thursday, 2 Oct. 2014 5:30 a.m. CDT



By JAMES NOKES - news@daily-chronicle.com

Pierre Seillan wanted to highlight the unique soils of Mount St. Helena in Knights Valley.

Thus, two vials of soil were packaged with Anakota Cabernet Sauvignon. A reddish brown vial with tiny pebbles and silty soil from the Helena Dakota Vineyard at 750 feet and a vial filled yellow-white sandy gravel from the 950-foot Helena Montana Vineyard.

<http://www.kcchronicle.com/2014/09/29/uncorked-difference-in-soil-elevation-produces-two-distinct-wines/aoizrxp/>



# A ground breaking study



Matt Siebecker examines a soil sample being prepared for analysis at Brookhaven National Laboratory.

## Research on trace metals in soil highlighted in Nature Communications

3:41 p.m., Sept. 22, 2014--A research team at the University of Delaware has developed a new method for observing chemical reactions in real and rapid time at the boundaries between soil mineral particles and water.

Details of the new method and the revealing data obtained with it were published Sept. 19 in the prestigious scientific journal *Nature Communications*.

<http://www.udel.edu/udaily/2015/sep/trace-metals-soil-092214.html>

## Extreme weather changes hurt soils' ability to store water, carbon

16 September 2014

Extreme seasonal changes in the Sierra Nevada can have lasting impacts on the health of meadows, which could mean less water and carbon storage in high-elevation wetlands, according to research conducted at UC Merced.

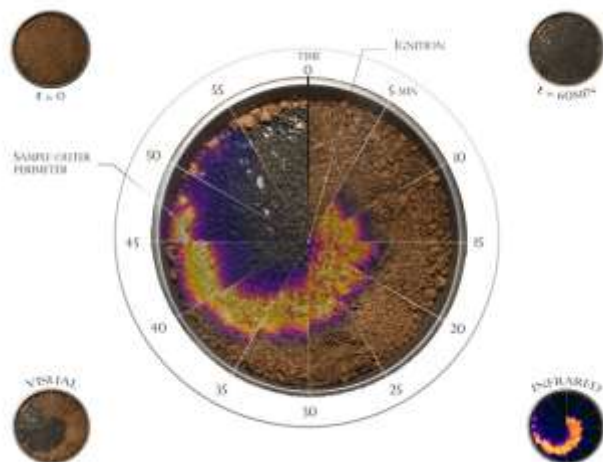
The results of work by then-graduate student and current staff member Chelsea Arnold and professors Asmeret Asefaw Berhe and Teamrat Ghezzehei, both with the School of Natural Sciences, indicate that changes in meadow soils and vegetation caused by extreme weather conditions in the mountains over the past three years have decreased the ability of those meadows to store water and carbon.

Read more here: [http://www.mercedsunstar.com/2014/09/16/3851784\\_extreme-weather-changes-hurt-soils.html?rh=1#storylink=cpy](http://www.mercedsunstar.com/2014/09/16/3851784_extreme-weather-changes-hurt-soils.html?rh=1#storylink=cpy)

## Soils at Imaggio: fire watch constellation

1Oct

Winner of the Best Fire Science Image, 11th IAFSS Symposium, Christchurch, New Zealand, 2014



Click on the image to see the original picture and details at [Imaggeo](#).

## Description

This composite shows a constellation of combined visual and infrared imaging of a smouldering combustion front spreading radially over a thin sample of dry peat. The central watch is created by a series of twelve wedges. Each wedge is extracted from a photo taken every 5 min from an elevated view looking down into the sample during the one-hour lab experiment. The circular peat sample ( $D=22$  cm) was ignited on the centre by an electrical heater. The average radial spread rate was 10 cm/h and the peak temperature  $600^{\circ}\text{C}$ . The top figures show the virgin peat (left) and the final residue (right). The bottom figures show the wedges in visual (left) and infrared (right) imaging. Smouldering combustion is the driving phenomenon of wildfires in peatlands, like those causing haze episodes in southeast Asia and Northeast Europe. These are the largest fires on Earth and an extensive source of greenhouse gases, but poorly studied. Our experiments help to understand this emerging research topic in climate-change mitigation by characterizing the dynamics of ignition, spread and extinction, and also measure the yield of carbon emissions. <http://gsoil.wordpress.com/2014/10/01/soils-at-imaggeo-fire-watch-constellation/>

## Growth rates on free draining soils falling

By [Cathal McAleer](#) on 19 September 2014

Mild conditions and no rainfall in September is enabling high grass utilisation.



However, [growth rates](#) on free draining soils are beginning to fall (from >60kgs/day down to 40-45kgs). To have sufficient cover built up by balance day (when growth rates meet demand and from which point we start eating into our bank of grass), we must hit weekly targets in our grass budget. I was horrified to see a few farmers still working off their grass wedge this week – fail to plan, plan to fail. As previous growth rate predictions may be higher than actual growth rates this week; owing to the moisture deficit on some farms, supplement must be introduced.

<http://www.agriland.ie/news/growth-rates-free-draining-soils-falling/>

## Plant life considered in ecosystem synergies

12 Sep 2014 by Chris Thomas



Poor survival of proteaceous species such as parrot bush (*Banksia sessilis*) and honey bush (*Hakea lissocarpha*)—mixtures containing these individuals sequester less carbon. Image: Bill & Mark Bell

Local flora species involved in UWA's Ridgefield Multiple Ecosystem Services Experiment are helping researchers to better understand agricultural processes including efficient nutrient cycles and maintaining biodiversity.

Read more at: <http://phys.org/news/2014-09-life-ecosystem-synergies.html#jCp>

## Irrigation becoming a trend on heavier soils

David Hest | *Corn+Soybean Digest*

Sep 15, 2014



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1

COMMENTS



Although dryland yields typically approach 175 bushels/acre on his fertile clay loam soils, Nebraskan Les Albrecht invested \$1,000/acre on irrigation in hopes of bumping yields another 30 bushels/acre.

Following the worst drought in his farming career – and growing frustration over competition for land – Les Albrecht expanded his operation internally in 2013 by adding five circles of irrigation to his dryland operation. He farms in the northeastern corner of Nebraska near Jackson, where irrigation is uncommon. In a normal year, his clay loam soils produce corn yields of 175 bushels/acre or better – hardly a prescription for irrigation. But Albrecht took a fresh look at ...

<http://cornandsoybeandigest.com/corn/irrigation-becoming-trend-heavier-soils>

## Chalky soils: plants for

Chalky soils are alkaline, so will not support ericaceous plants that need acid soil conditions. Very chalky soils may contain lumps of visible chalky white stone. Such soils cannot be acidified, and it is better to choose plants that will thrive in alkaline conditions. Many chalky soils are shallow, free-draining and low in fertility, but variations exist, and where there is clay present, nutrient levels may be higher and the water holding capacity greater.

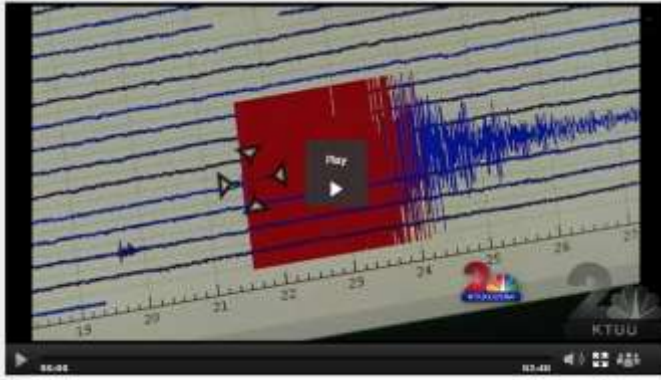


<https://www.rhs.org.uk/Advice/Profile?pid=763&cid=607>

## Soils in Anchorage 'earthquake country' amplify magnitude

Lacie Grosvold, *Multimedia Journalist*, [lgrosvold@ktuu.com](mailto:lgrosvold@ktuu.com)

POSTED: 08:11 PM AKDT Sep 25, 2014 UPDATED: 07:51 AM AKDT 26 Sep 2014



Anchorage Soils Amplify Magnitude

### Anchorage Soils Amplify Magnitude

The most recent Alaska earthquake demonstrates how the 49th state gets 90 percent of the energy released by earthquakes in the country.

United State Geologic Survey scientist Rob Witter said a shaker like today's is a good reminder for Alaskans to be prepared.

"We live in earthquake country," he said. <http://www.ktuu.com/news/news/anchorage-soils-amplify-magnitude/28254112>

## **Image: Southern Darfur region of Sudan, just south of the city of Nyala**

10 Oct 2014



This image from Korea's Kompsat-2 satellite on 8 February 2013 shows an area in the southern Darfur region of Sudan, just south of the city of Nyala

Read more at: <http://phys.org/news/2014-10-image-southern-darfur-region-sudan.html#jCp>

# Drought conditions creeping south, taking a toll on grain crops

Catherine McAloon, Wednesday 8 October 2014 - 13:17 EDT



The wheat harvest has started in some northern cropping areas. This year's national crop is expected to be down on recent years. - ABC



Rainfall deficiencies in the 10 months to the end of September indicate drought conditions developing in southern areas of Australia. - ABC

The weather bureau's latest drought statement confirms dry conditions that have plagued north-eastern Australia are creeping further south, reducing crop yields in grain growing regions.

While areas of Queensland and northern New South Wales have had some of their driest two-year periods on record, long-term rainfall deficiencies are also developing in western Victoria, south-eastern South Australia, parts of Tasmania and Western Australia.

<http://www.weatherzone.com.au/news/drought-conditions-creeping-south-taking-a-toll-on-grain-crops/157261>

## Chinese science gets mass transformation

Teamwork at centre of Chinese Academy of Sciences reform.

[David Cyranoski](#)

23 September 2014



Pang Xinglei/Xinhua Press/Corbis

The Chinese Academy of Sciences, which employs 60,000 people, opens its 2014 congress in Beijing.

Change is coming to the institute that has been at the heart of China's scientific development since the communist state began. The Chinese Academy of Sciences (CAS) is making unprecedented structural reforms to foster collaboration and turbocharge research. Proponents say that the initiative will make China a world leader in areas from neuroscience to particle physics; detractors question whether modern China needs such a sprawling organization at all. <http://www.nature.com/news/chinese-science-gets-mass-transformation-1.15984>

## The effects of growing rice in low water and high salt conditions

6 Oct 2014



Credit: Oliver Spalt C.C (Wikimedia)

Two papers in the *Pertanika Journal of Tropical Agricultural Science* investigate the effects of low water input, and high salt levels, on rice growth.

Read more at: <http://phys.org/news/2014-10-effects-rice-high-salt-conditions.html#iCp>

## Enhanced tolerance to ion toxicities improves wheat yield in WA

8 Oct 2014 by Tony Malkovic



Researchers from The University of Western Australia have identified ways for farmers in medium-to-high rainfall areas of the WA grain belt to increase wheat yield. Their breakthrough may have implications for other important grain crops in WA, such as barley and canola.

Read more at: <http://phys.org/news/2014-10-tolerance-ion-toxicities-wheat-yield.html#jCp>

## More big 'Ring of Fire' quakes likely, say scientists

Stuart Gary  
ABC

Tuesday, 16 September 2014

The Pacific Ocean's volcanic 'Ring of Fire' could produce more earthquakes of magnitude 9 or greater, say researchers.

Their findings, reported in the *Bulletin of the Seismological Society of America*, are based on a new way of calculating the probability of an earthquake.

The new research comes in the wake of the 2004 magnitude 9.3 Sumatra-Andaman earthquake which killed over 230,000 people across the Indian Ocean, and the 2011 magnitude 9 Tohoku earthquake which devastated Japan, claiming almost 19,000 lives.

"The strength of both these earthquakes caught many scientists by surprise," says the study's lead author Dr



The findings are based on a new earthquake risk assessment method (Source: xiefei/istockphoto)

<http://www.abc.net.au/science/articles/2014/09/16/4086773.htm>

**Study shows most water in lunar soil generated by solar wind, not result of comet or meteorite impacts**



7 Oct 2014 by [Bob Yirka](#)



This is a composite image of the lunar nearside taken by the Lunar Reconnaissance Orbiter in June 2009, note the presence of dark areas of maria on this side of the moon. Credit: NASA

(Phys.org) —A pair of researchers with the Sorbonne Universités, Muséum National d'Histoire Naturelle, has determined that most of the water in the soil on the surface of the moon was formed due to protons in the solar wind colliding with oxygen in lunar dust, rather than from comet or meteorite impacts. In their paper published in *Proceedings of the National Academy of Sciences*, Alice Stephant and François Robert describe their study and the results they found.

Read more at: <http://phys.org/news/2014-10-lunar-soil-solar-result-comet.html#jCp>

## **New Evidence That We Could Grow Vegetables On Mars And The Moon**



Could we grow a garden in the soils of Mars and the Moon? A new study digs down deep into the interstellar dirt and says that, yes, the soil up there is capable of supporting plant germination. In fact, it might even be as good as some of the poorer soils here on Earth.

<http://io9.com/new-evidence-that-we-could-grow-vegetables-on-mars-and-1636418166>

# Is Martian soil actually good for farming?

Updated by Joseph Stromberg on 20 September 2014, 9:00 a.m. ET @josephstromberg joseph@vox.com

TWEET(134)SHARE+1LINKEDIN(50)EMAILPRINT



A NASA rendering of farming in Martian greenhouses.(NASA)

*DON'T MISS STORIES. FOLLOW VOX!*

*FOLLOW*

If we ever wanted to **permanently colonize Mars**, one thing seems probable: we'd have to figure out how to grow some food there.

This raises an interesting question: could we use Martian soil to do it?

<http://www.vox.com/2014/9/20/6532299/mars-farming-soil>

## El Nino still 'teasing' climatologists

MATTHEW CAWOOD

25 Sep, 2014 04:00 AM



*Dr Watkins suggests that graziers be cautious in their response to one-off rainfall events*

THE emergence of a climatic event that can be categorised as El Nino remains as elusive as it was a month ago, but El Nino-like conditions look more likely than not to plague eastern and northern Australia through summer.

The Bureau of Meterology's (BoM) latest ENSO update again gives 50 per cent odds of an El Nino emerging over the next few months - meaning double the normal likelihood - but that only tells part of the story.

<http://www.stockandland.com.au/news/agriculture/general/news/el-nino-still-teasing-climatologists/2713131.aspx>

## Special issue on geo-environmental effects of wildfires

28Sep



When fire runs. Credit: A. Jordán. Click to see the original picture and data at Imageo.

*Noemí Lana-Renault Monreal*  
[noemi-solange.lana-renault@unirioja.es](mailto:noemi-solange.lana-renault@unirioja.es)  
*University of La Rioja, Spain*

We are glad to announce that the Special Issue on “Geo-environmental effects of wildfires”, which has been recently published by Cuadernos de Investigación Geográfica (volume 40 (2), 2014). This Special Issue aims at bringing together the key impacts of wildfires on runoff, soil properties and erosion, and plant biomass changes.



Cuadernos de Investigación Geográfica.

Some contributions to this Special Issue include field measurements and lab experiments. [Keesstra et al. \(2014\)](#), investigated in the lab the fire effects on a Redzina soil and suggested that water repellency and protection by ash were <http://gsoil.wordpress.com/2014/09/28/special-issue-on-geo-environmental-effects-of-wildfires/>

## Urban Soils Panel, Nov 20

Date

Thursday 20 November 2014

About this event

Urban Agriculture is becoming increasingly popular and touted as a resilience building tool for urban areas seeking a transition to a more sustainable, local food system. However, urban soils contamination is a major limiting factor to the scaling up of urban agriculture practices. There is a need for research of the local soils in the East Bay to find out what the common contaminants are and what health risks these contaminants pose to current and future urban agriculture practitioners, as well as consumers of produced grown in the surrounding cities. This presentation and panel highlights three current hyper-localized urban soils research projects. The researchers will also speak on a panel about their work.

**Healing From The Ground Up: Soil Testing, Storytelling, and Ecological Restoration in Richmond, CA**

Ellie Lum and Josh Arnold <https://www.cnr.berkeley.edu/events/2014/10/urban-soils-panel-nov-20>

## Coping with different soils: US study proves biochar use

By Graeme O'Neill

30 Sept. 2014, 3:30 a.m.

A US study has answered a key question about the effects of adding biochar – powdered charcoal – to soils, and in the process has added to the compelling case for establishing mallee plantations on grain farms in the Victorian Mallee and the Millewa.



Doing the hard work: A Mallee harvester.

Researchers at Rice University in Houston, Texas, and Colorado College, have explained the paradoxical ability of biochar to improve drainage in clay soils, and improve water retention in free-draining sandy soils. <http://www.sunraysiadaily.com.au/story/2592604/coping-with-different-soils-us-study-proves-biochar-use/?cs=1511>

## **CALCIUM SULFATE CAN HELP REMEDIATE IRON CHLOROSIS**

Iron chlorosis is a yellowing of plant leaves caused by iron deficiency. However it is not always a true iron deficiency but rather an iron tie-up in plants and soil. Yellow leaves indicate a lack of chlorophyll, the green pigment responsible for photosynthesis (sugar production) in plants. The causes of iron chlorosis are complex and not completely understood. It could be a deficiency in the soil or the plant or an iron tie-up in the soil or plant. Many reactions govern iron availability and make iron chemistry in the soil complex. Iron chlorosis generally occurs in soils with a high pH and are calcareous. Even though these soils have plenty of iron, the high pH causes chemical reactions that make the iron unavailable to plant roots <http://phys.org/earth-news/>

## **Affordable wild radish solutions**

GREGOR HEARD

08 Oct, 2014 04:00 AM



*It has a range of resistances to popular and cheap chemicals and its durable seed can lay dormant*

Cameron Warne at the recent Birchip Cropping Group (BCG) main field day speaking on the use of a chaff deck.

ANNUAL ryegrass is commonly regarded as public enemy number one for croppers across Australia, but ask many what weed truly strikes fear into them and it is the broadleaf wild radish that is their major concern.

It has a range of resistances to popular and cheap chemicals and its durable seed can lay dormant for up to 10 years.

Cutting down viable wild radish seed has been a big part of the push, mainly led out of Western Australia, towards post-harvest seed management, whether it be chaff carts or the more expensive Harrington Seed Destructor.

<http://www.stockandland.com.au/news/agriculture/cropping/general-news/affordable-wild-radish-solutions/2712988.aspx>

## **Launch of on-line soil maps completes the Irish Soils jigsaw**

**Date released:** 15 Sep 2014, 9:57 AM

A harmonised soil map of Ireland with an associated web-based soil information system has been unveiled jointly today by Teagasc and the Environmental Protection Agency (EPA). Freely available through a public web site, the Third Edition National Soil Map details the pattern and properties of all Ireland's 213 soil types at a scale of 1:250,000. The Irish Soil Information System is the largest research project funded by the EPA, with a total budget €4.8million.

Launching the Irish Soil Information System at Johnstown Castle, Co. Wexford, Prof Gerry Boyle, Director of Teagasc, said:

"The publication of the Irish Soil Information System opens a new chapter for agriculture and for our environment. For the first time, after three generations of soil science, we have a complete picture of the diversity and properties of soils in Ireland. Figuratively speaking, this is equivalent to 'the initial sequencing of Ireland's soil genome'".

<http://www.epa.ie/newsandevents/news/name.55275,en.html>

## **New guidance for soil management in Mass.: The DEP Similar Soils Provision Guidance**



Frank Ricciardi, Weston & Sampson, Inc.

Environmental and construction professionals have been dealing with the issue of soil management during construction for decades. For urban construction, space to stockpile soil is non-existent and for rural areas, on-site soil management is problematic due to runoff and erosion concerns. Disposal of soil from these sites often costs property owners a hefty premium - even for soil that is not contaminated! The presence of urban fill, which contains chemical constituents related to coal/wood ash, slag, and asphalt, makes the reuse of soil in other areas difficult due to a guiding principal in the environmental regulations of the Massachusetts Contingency Plan (MCP) at 310 CMR 40.0032(3) known as the "Anti-degradation Provision." This provision, while technically only applicable to soil generated from Massachusetts Ch. 21E disposal sites (e.g. those sites that have had a reportable release of oil and/or hazardous materials) states that soil may only be reused at locations that do not contain significantly lower contaminant concentrations than the soil being reused. Significantly is not defined.

<http://nerej.com/75095>

## Aggressive tillage leading to less productive soils

by [Chris Houck](#)

As the fall harvest approaches, the tillage season will also begin. Here in Rice County and surrounding areas, aggressive tillage combined with extreme rain events has led to some very high soil erosion rates. This trend is very disturbing, as the loss of topsoil not only reduces crop yields, pollutes rivers and lakes, but also threatens the future of agriculture as we know it. Many fields have already lost most of their topsoil, which is the most productive component of the soil profile. There are many reasons we have seen an increase in soil erosion, but the good news is that all farmers have the potential to prevent further degradation by changing the way the land is prepared. [http://www.southernminn.com/faribault\\_daily\\_news/opinion/guest\\_columns/article\\_28cadcc3-1c1b-57c3-b648-02a7c137cf55.html](http://www.southernminn.com/faribault_daily_news/opinion/guest_columns/article_28cadcc3-1c1b-57c3-b648-02a7c137cf55.html)

## Florida's climate boosts soils ability to store carbon



Field sampling to collect soil samples for carbon analysis. Courtesy: University of Florida

**By Brad Buck,**

Warm temperatures and a wet landscape increase soil's ability to store carbon, which in turn helps mitigate greenhouse gas emissions, according to a new University of Florida study covering 45 years of data.

Soil-stored carbon can slow the build-up of carbon-based gases in the atmosphere, a phenomenon believed to be a cause of global climate change. So it's vital to preserve soil carbon, said Sabine Grunwald, a UF soil and water science professor who led the research. <http://www.reportingclimatescience.com/news-stories/article/floridas-climate-boosts-soil-carbon-storage.html>

**“...only rarely have we stood back and celebrated our soils as something beautiful and perhaps even mysterious. For what other natural body, worldwide in its distribution, has so many interesting secrets to reveal to the patient observer” --- *Les Molloy***