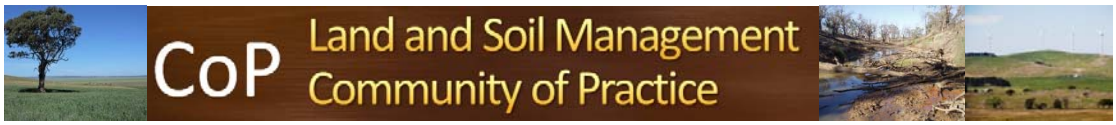


Hi All,

Noel Schoknecht, who has done so much for soils in Australia, has called it quits. Noel has pull up stumps at DAFWA and has stepped down as the chair of the National Committee for Soil and Terrain (NCST), a post he held for over 15 years. A big thanks to Noel for his dedication, commitment, leadership and ability to get his head around an wide range of issues. I cannot ever remember Noel being ruffled, he always appeared calm and in control. Hopefully we will see him around the traps, even though it will not be as part of the WA govt or the NCST.

A number of CoP members have participated in World soils day events around Australia, this includes the production of youtube clips which have been added in the last week.

Clips have been produced for eSPADE and eDIRT and are live on OEH YouTube!

1. eSPADE and eDIRT clips

Congratulations to CoP members Humphrey Milford and Nicole Simons who did a fantastic job, they're really well put together videos.
For eSPADE
https://www.youtube.com/watch?v=c4jalqkuQqU

For eDIRT
https://www.youtube.com/watch?v=Fb8UPrYPJTs

The Soil Knowledge Network (SKN) have put together a number of clips on iconic NSW soils

2. Iconic Soils of NSW clips

Sally McInnes-Clarke has uploaded clips to youtube.

https://www.youtube.com/channel/UCYR2Z1c1kEO2hUJs7PHuiuw/playlists

Sally has also linked them to the SKN facebook page

https://www.facebook.com/NSW-Soil-Knowledge-Network-146935065480302/

Please have a look, 'like' comment and share them if you can… even if you aren't a social media addict… it does make a difference. Last week while

travelling and filming the clips Sally posted photos and comments behind the scenes. Nearly 2800 people saw those posts.

Regards

Brian

Climate talks in Paris commit to boosting carbon in soils to limit globa warming

ABC Rural By Sarina Locke

Print Email Facebook Tweet More 32

Posted 2 Dec 2015, 3:06pm

Australia has signed up to a global commitment to boost soil health and reduce carbon emissions.

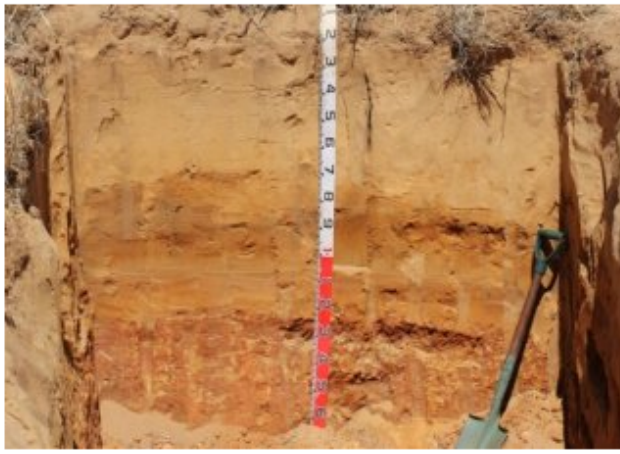


PHOTO: The Australian government is already spending millions of dollars on carbon soil research. (Clint Jasper)

MAP: Sydney 2000

The French Agriculture Minister launched the program called "4 per 1000" during climate talks in Paris this week.

It is a target of increasing carbon in soils by 0.4 of a per cent a year, around the world.

A communique on the commitment said a 0.4 per cent annual growth rate of soil carbon stock would make it possible to halt the present increase in atmospheric CO2.

Soil scientist and Dean of Agriculture at Sydney University, Alex McBratney, said there was enormous opportunity to increase soil carbon in Australia, and produce more food.

"That's the joined up thinking that we need when we try to solve this climate change issue, we can als secure food and water into the future," Professor McBratney said.

http://www.abc.net.au/news/2015-12-02/soil-carbon-paris-agreement/6993592

Report dishes the dirt on world soil health

10 December 2015

A report by the Intergovernmental Technical Panel on Soils says 33 per cent of land is moderately to highly degraded.

Massey University has contributed to a report issued by the Intergovernmental Technical Panel on Soils, stating that the world's soils are at best only in fair condition and in some areas are very poor.

Read more at: http://phys.org/news/2015-12-dishes-dirt-world-soil-health.html#jCp

Africa: CGIAR Consortium Develops Climate Solutions with Soils for Food Security

Photo: Amadou Keita/IFAD

For the people living in the Sahel region of Mali, climate change is not a question of debate; it's an undeniable reality and a pressing concern. For decades the climate has been getting hotter and drier.

PRESS RELEASE

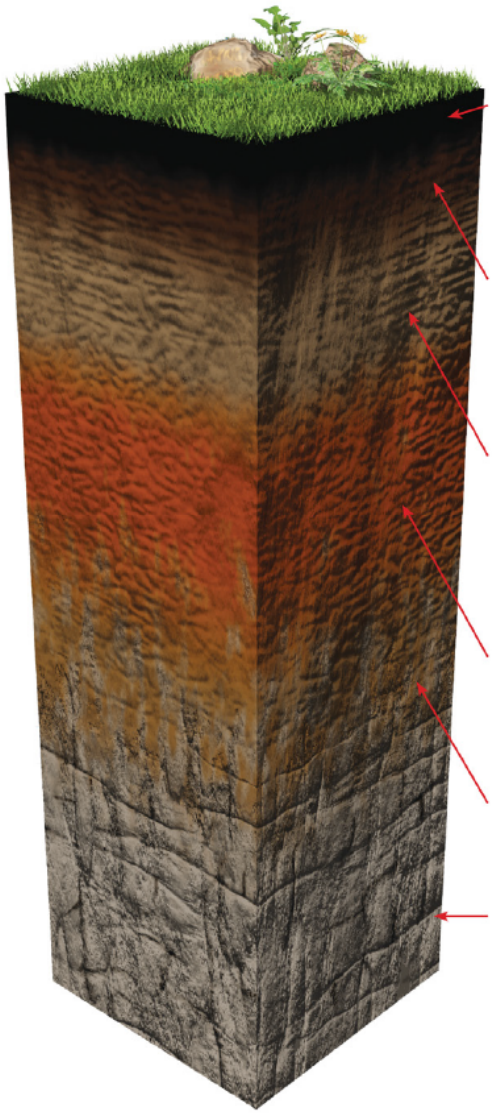
Paris — *Proposed initiative worth $225 million in seven developing countries could boost yields by 20% whilst offsetting emissions by 15%*

At the U.N. climate talks (COP21), leading agriculture research partnership CGIAR Consortium of International Agricultural Centers has announced a five-year proposal to mitigate future climate change through soil carbon sequestration in developing world agriculture. It forms part of the new “4 pour 1000” initiative, launched by France as part of the Lima-Paris Action Agenda, which seeks to raise the amount of carbon in soils.

http://allafrica.com/stories/201512041852.html

Climate Influences Soils

Climate refers to the temperature and moisture conditions of an area over time. Climate is the typical patte
the area over the long term, but weather is the actual daily condition. Of interest, climate is one of the five s
forming factors and has a significant influence on the properties of soil. Soils in warmer or wetter climates a
developed than soils in cooler or drier climates. How developed a soil is can be determined from looking at
profile. A profile can be found by digging into the ground and looking at the different layers of soil, also kno
horizons. Soils that are more developed have more horizons and deeper horizons than soils that are less de
Wet conditions favor **leaching**, or moving deeper with water, of clay and other minerals so that E and B hori
develop. Warm conditions promote the chemical and biological reactions that develop parent material into s



O (humus or organic)
Mostly organic matter such as ***decomposing*** leaves. The **O** horizon is thin in some soils, thick in others, and missing in yet others.

A (topsoil)
Mostly minerals from parent material with a little organic matter added. A good material for plants and other organisms. You can find lots of roots here.

E (eluviated horizon)
Leached of clay, minerals, and organic matter, which makes the **E** horizon sandier and lighter in color than the **A** horizon above and the **B** horizon below it. Often found in some older soils and forest soils.

B (subsoil)
Rich in minerals that ***leached*** (moved down) from the **A** or **E** horizons and accumulated here. Not present in all soils.

C (parent material)
The deposit at Earth's surface from which the soil developed.

R (bedrock)
A mass of rock that forms the parent material for some soils if the bedrock is close enough to the surface to weather.

In a dry climate, the A horizon because there are few plants matter, and the C horizon wou with nutrients still locked into there is not enough water to p and leaching of minerals, or d B horizon. In a tropical environ can become so leached that t nutrients available from soil m are some examples of why the climates is not as desirable fo homes, or other uses.

While weather is a short-term certain weather cycles can still example, soil can be dried out during droughty or windy weat is dried out, plant growth is re reduces the stability of the sur allows more erosion. An extrem this is the process of **desertifi** are losing stable plant commu unstable themselves and begi sand dunes. Worldwide, more degradation can be attributed

https://www.soils.org/files/sssa/iys/november-soils-overview.pdf

Increasing aridity reduces microbial diversity

9 December 2015

Credit: Flickr/USDAgov

A new study drawn from more than 80 dryland sites across the world indicates that increasing aridity reduces abundance and diversity of microbial communities which carry out for most of ecosystem services such as primary production, water filtration and climate regulation.

Read more at: http://phys.org/news/2015-12-aridity-microbial-diversity.html#jCp

State Government creates taskforce to deal with conflict between mining and agriculture

ABC New England
By Kelly Fuller
Posted 25 Nov 2015, 4:25pmWed 25 Nov 2015, 4:25pm

Photo: New South Wales Premier Mike Baird talks to farmer John Hamparsum on the Liverpool Plains. (Supplied)

The New South Wales Government is developing a land use conflict taskforce to try and resolve problems in 'hot spot' areas.

The taskforce will develop and present options to ministers for better managing and resolving conflicts between mining, coal seam gas and agriculture.

The Liverpool Plains in the state's north-west has been identified as the desktop case study for the taskforce. http://www.abc.net.au/news/2015-11-25/state-government-creates-taskforce-to-deal-with-conflict/6973280

http://www.abc.net.au/news/2015-08-26/shenhua-watermark-coal-mine-barnaby-joyce-fact-check/6660140

Strathmore Station land clearing under investigation for breaches of law, damage to environment

Exclusive by the National Reporting Team's Mark Willacy
Updated 22 Nov 2015, 5:06pmSun 22 Nov 2015, 5:06pm

Photo: Almost 58,000 hectares of land has been cleared at Strathmore Station in Queensland. (Supplied)

One of the country's largest single land clearings is being investigated over concerns bulldozing in Queensland's Gulf Country may have affected threatened species, damaged wetland and broken the law.

Key points

- Queensland Environment Minister requests investigation of "possible breaches" over clearing
- Environmentalists claim rare bird of prey habitat removed
- Strathmore Station owner says changes will make land more productive, create jobs

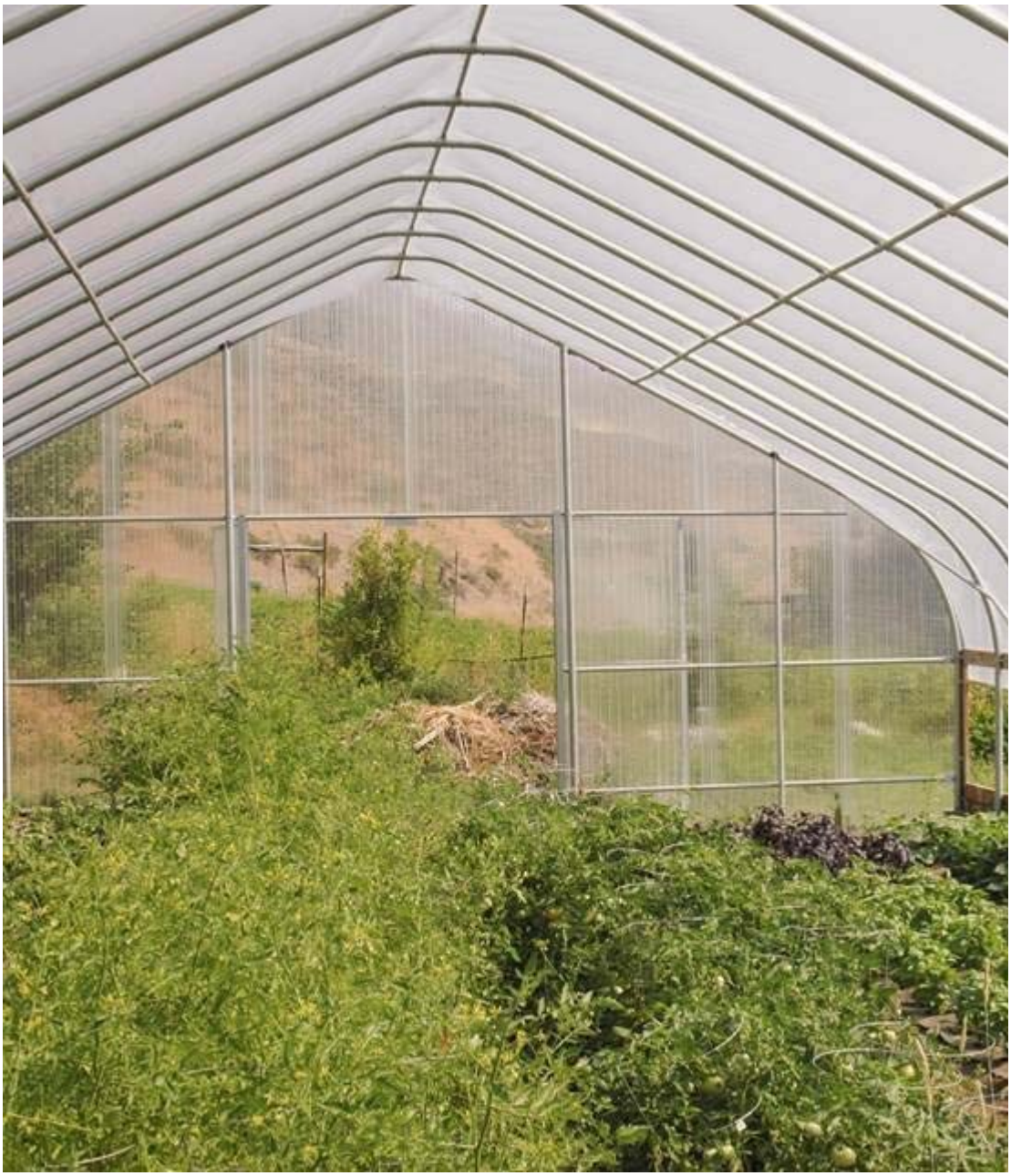
Strathmore Station owner Scott Harris received permission under the former Newman government to clear 58,000 hectares — or 580 square kilometres — to develop high-value agriculture such as sorghum and soy beans.

http://www.abc.net.au/news/2015-11-22/land-clearing-investigated-for-legal-breaches-environment-damage/6961108

New farmers' legacy for the land

By Jennifer Cole, Public Affairs Specialist

Cameron Green stands among the tomatoes in the high tunnel she operates with Eric Wittenbach.



Diverse organic crops are growing in this high tunnel in Washington state.

Some people leave a legacy for their children. Cameron Green and Eric Wittenbach plan to leave theirs to Mother
Nature. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wa/newsroom/features/?cid=NRCSEPRD417246

Flushed resource restores ecosystem

9 December 2015

Basta and Dawn Busalacchi showcase a mound of biosolids -- a nutrient-rich growing medium recycled from sewage. Credit: Nick Basta.

Every city has abandoned industrial sites. Encouraging life to return to these barren areas is a challenge. It requires a healthy topsoil for plants and animals to flourish. Cities, with their heavily compacted and often contaminated soils, often struggle to restore blighted spaces. Quality soil is necessary—but not abundant in cities. Enter biosolids.

Read more at: http://phys.org/news/2015-12-flushed-resource-ecosystem.html#jCp

Climate change brings challenge in maintaining healthy soils

Climate change brings challenge in maintaining healthy soils By Robert Pore robert.pore@theindependent.com

Posted on 4 Dec 2015

by **Robert Pore**

On Friday, the second World Soil Day took place marking the end of the International Year of Soils that was declared by the United Nations Food and Agriculture Organization.

In a report issued Friday, the FAO estimated that about 33 percent of global soils are already degraded. The UN came out saying this trend must be reversed through sustainable soil management practices.

http://www.theindependent.com/news/local/climate-change-brings-challenge-in-maintaining-healthy-soils/article_63af9a48-9af1-11e5-861f-d760debb0670.html

When 'soil' isn't soil

Peat is currently a major component of many potting soil blends. Peat is the layered accumulation of partially degraded organic material over hundreds of years. But in some parts of the world, peatland habitats are shrinking. The harvest of peat may also release additional carbon, contributing to climate change. Efforts are underway to find suitable replacements—a considerable challenge given the airy, absorptive nature of peat that is ideal for plant growth.

Tomato growth in a hobby product from the United Kingdom compared to the market leading brand.

Credit: Ray O'Haire, University College Dublin, Ireland.

When you travel down a road, poor infrastructure and maintenance becomes more than a nuisance -- it is a hazard. The same is true with indoor potting soils. The right choice with good maintenance makes all the difference.

Journal Reference:

1. W.R. Carlile, Costantino Cattivello, Patrizia Zaccheo. **Organic Growing Media: Constituents and Properties**. *Vadose Zone Journal*, 2015; 14 (6): 0 DOI: 10.2136/vzj2014.09.0125

http://www.sciencedaily.com/releases/2015/10/151007185334.htm

Soils store carbon, reflect the sun's radiation and hold water

By **Katie Allen, Kansas State University** 1 December 2015 | 12:45 pm EST

K-State associate professor of geography Kendra McLauchlan runs soil tests in her lab to determine the carbon content.

Several components of the earth influence its climate. The climate system involves the earth's oceans, land surfaces, soils and the atmosphere, according to Kendra McLauchlan, associate professor of geography at Kansas State University. The interactions among these components with one another and with various life forms on earth also play a role in climate.

http://www.agprofessional.com/news/soils-store-carbon-reflect-sun%E2%80%99s-radiation-and-hold-water

DustWatch
NEW SOUTH WALES

DustWatch Report

October 2015

Dust activity	Higher in the south than September 2015
Wind strength	Stronger than September 2015; average for October
Groundcover	Reducing across the wheat / sheep belt
Rainfall	One of the driest Octobers for Victoria and South Australia
Land management	Cereal harvest commenced

Groundcover

Groundcover dropped below 50% near Walgett in northern New South Wales (yellow and red colours in Figure 2). Most land west of the Darling River is also below 50% cover. The Strzelecki Desert Plains west of Tibooburra have the lowest groundcover in the state, with below 30%.

The South Australian Arid Lands and the Queensland Desert Channels both have large areas at or below 30% cover. This is partly due to below average rainfall in the area (Figure 5A+5B).

Victoria has unusually low groundcover for this time of the year with substantial areas now at or below 50% cover (yellow colours). This is linked to below average rainfall for the past 6 months.

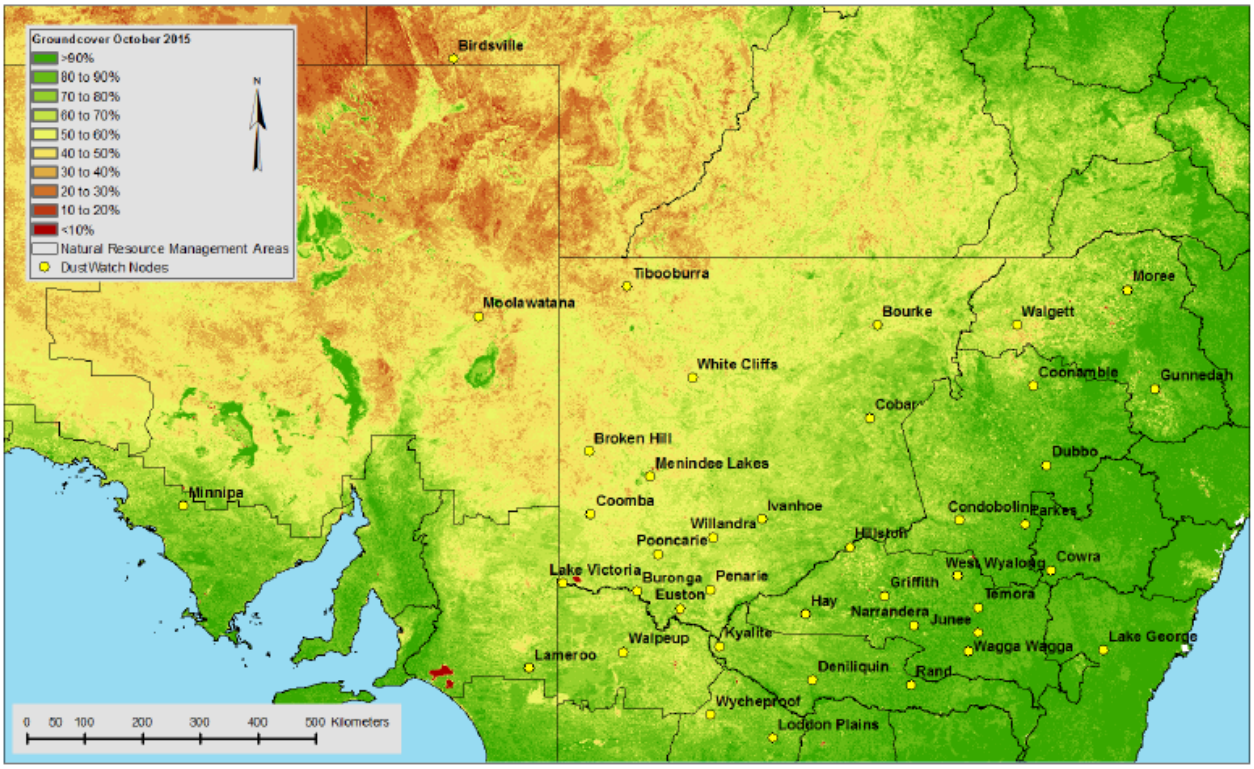


Figure 2: Groundcover for October 2015 as determined from MODIS data.

http://www.environment.nsw.gov.au/resources/dustwatch/150850DWNL.pdf

Properly manage our soils

Mohammad H. Golabi *4:43 p.m. ChST December 7, 2015*

(Photo: PDN file)

I would like to introduce the 11th soil order, the ultisols. Ultisols (from Latin ultimus, for "last") are generally formed from fairly intense weathering processes. During the intense weathering of primary minerals much of the calcium, magnesium and potassium have been leached from these soils, forming most of acid soils found primarily in humid temperate and tropical areas of the world with relatively low native fertility.

These weathering processes have resulted in clay-enriched sub soils dominated by quartz, kaolinite, and iron oxides. Ultisols make up about 8 percent of the world's ice-free land surface and support 18 percent of the world's population. However, ultisols have a moderately low capacity to retain fertilizers and/or lime, which may be used to correct their acidity level.

http://www.guampdn.com/story/opinion/2015/12/07/properly-manage-our-soils/76768688/

Celebrating soils in the Hub

Wednesday, 2 December 2015, 10:36 am

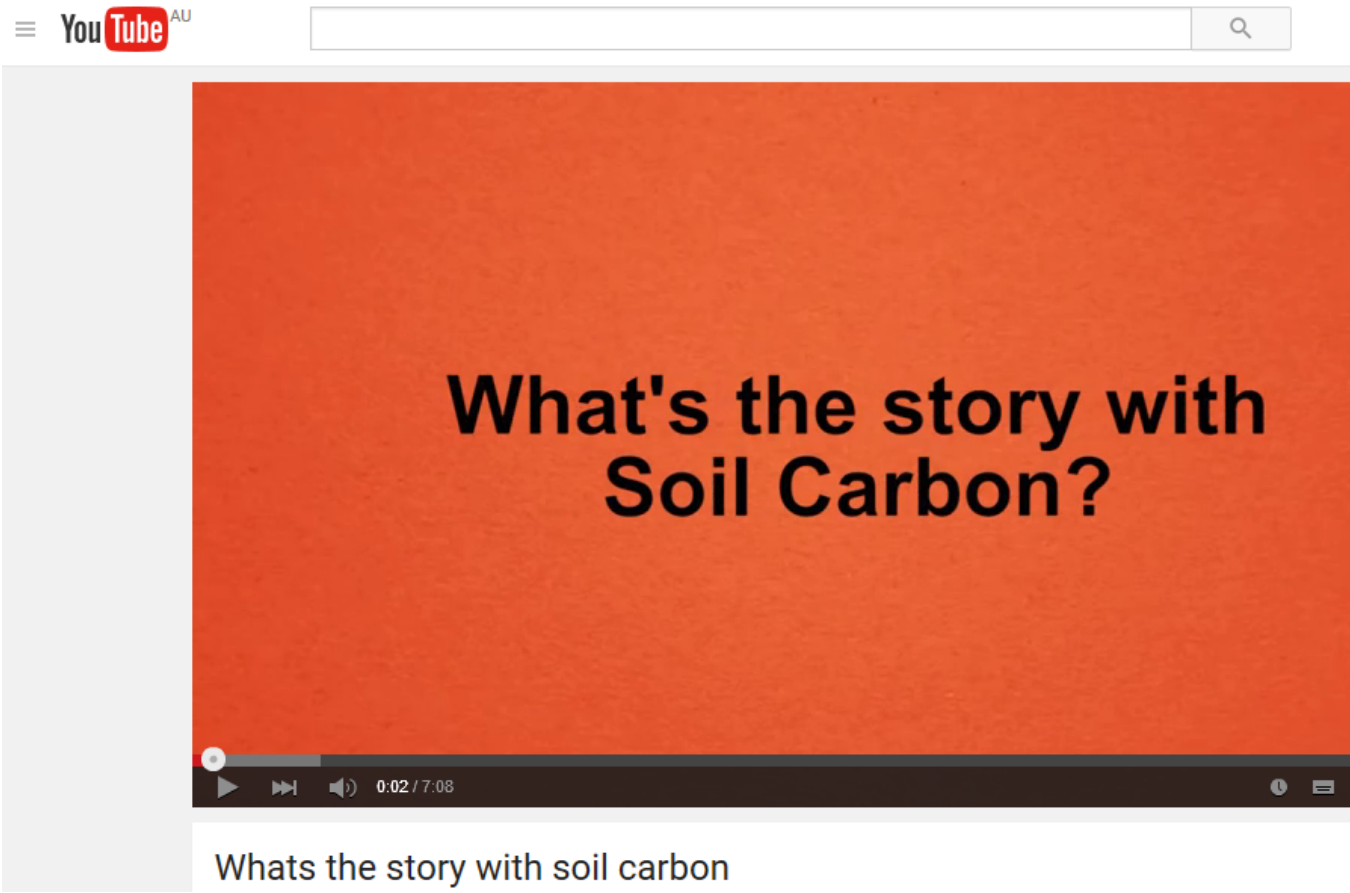
Press Release: Lincoln University

2 December 2015

Celebrating soils in the Hub

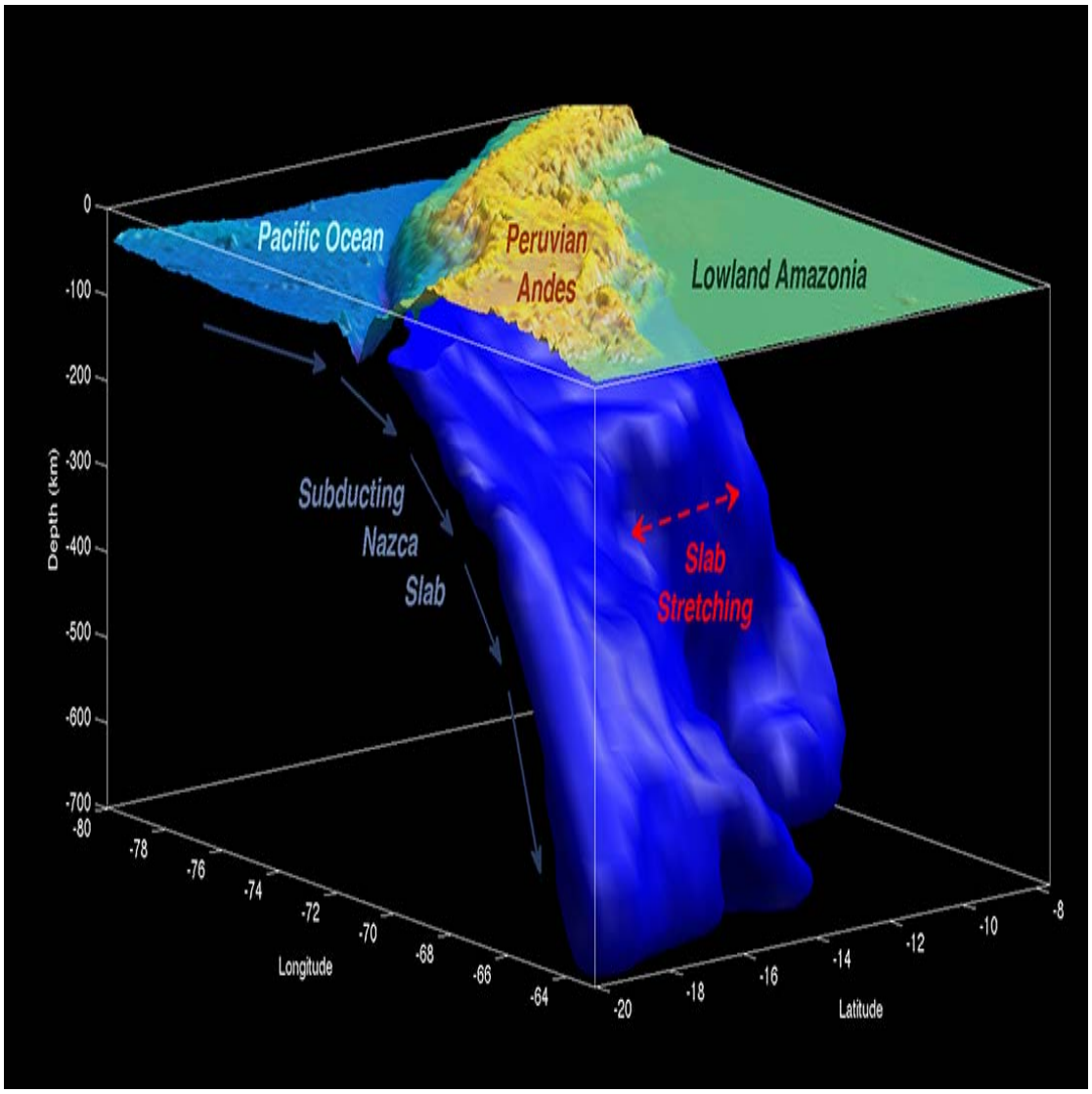
Scientists, students, local government and industry representatives gathered at Lincoln University last week to celebrate the International Year of Soils at a workshop that focussed on the profound importance of soils globally and to New Zealand.

The New Zealand Society of Soil Science organised the workshop with the intention of bringing together Lincoln Hub partners, members of other local research institutions, industry bodies and regulatory authorities to talk about the management and protection of soil resources in New Zealand, where the growing intensity of farming is making soil-related issues more urgent.
http://www.scoop.co.nz/stories/SC1512/S00011/celebrating-soils-in-the-hub.htm



https://www.youtube.com/watch?v=LEYOkgcu6Cw&app=desktop

Stretchy slabs found in the deep Earth



A new study suggests that the common belief that the Earth's rigid tectonic plates stay strong when they slide under another plate, known as subduction, may not be universal.

Typically during subduction, plates slide down at a constant rate into the warmer, less-dense mantle at a fairly steep angle. However, in a process called flat-slab subduction, the lower plate moves almost horizontally underneath the upper plate.

The research, published in the journal Nature Geoscience, found that the Earth's largest flat slab, located beneath Peru, where the oceanic Nazca Plate is being subducted under the continental South American Plate, may be relatively weak and deforms easily.
Read more at http://www.geologyin.com/2015/11/stretchy-slabs-found-in-deep-earth.html#pRLYqcOK4D1Xe2YG.99

https://www.youtube.com/watch?v=T-lkKk4hsSo&list=PL4J8PxoprpGZ3gPDXRfa_DNBYXoF-ruG2&index=13

https://www.youtube.com/watch?v=oVce_FBvS3Q

Lucerne thrives in acidic soil trial

Alisha Fogden@alishafogden
18 Nov. 2015, 5 a.m.

One of the best performing combinations was the Sardi 7 Series 2 lucerne variety with the new strain of rhizobia SARDI 736.

HIGHLY acidic soils in the Adelaide Hills are not considered an optimum environment for growing lucerne but research at Pewsey Vale has shown that a bit of liming or the right combination of lucerne cultivar and rhizobia can produce phenomenal results.

The acid-tolerant lucerne trial by SARDI, funded by Meat & Livestock Australia, was sown in early October last year.
http://www.stockjournal.com.au/story/3564849/lucerne-thrives-in-acidic-soil-trial/

Threat to UK soils "urgent and serious", says former farming minister

26 November 2015, by Gavin McEwan, 1 comment

Former farming minister John Gummer, now Lord Deben, has told a parliamentary inquiry that the threat to Britain's soils is "urgent and serious, and the evidence is that it will become even more so", and described the Government's response to the problem as "not enough".

Image: Alternative Heat

Deben, now chair of the Committee on Climate Change, said the committee believed growing crops for biomass "is not of itself sustainable in large measure", and that much of it "has no carbon saving at all". http://www.hortweek.com/threat-uk-soils-urgent-serious-says-former-farming-minister/edibles/article/1374735

How Healthy Soils Can Help in the Fight Against Climate Change

Ben Chou, Natural Resources Defense Council | November 19, 2015 4:17 pm | Comments

When you think about the most important actions we can take to fight climate change, you probably think of using your car less (or even getting rid of your car), reducing energy use in your home, or even supporting the development of cleaner forms of energy like solar and wind. While all of these things are important when it comes to reducing the release of dangerous carbon pollution that is causing climate change, one of the most overlooked solutions is lying right below our feet—soil!

Our new *Climate-Ready Soil* report finds that by using cover crops to build soil health on just half of the corn and soybean acres planted in the top 10 agriculture states, we can help to capture more than 19 million metric tons of carbon each year—that's the same as removing 4 million cars off the road!

http://ecowatch.com/2015/11/19/healthy-soils-climate-change/

Sediment study of African lake may help explain huge number of related fish species

8 December 2015 by Bob Yirka

Drilling site in nearly 2000' of water on Lake Malawi. Drill cores at this location penetrated more than 1250' below the bottom of the lake. Credit: Jason Agnich, University of Minnesota Duluth.

(Phys.org)—A team of researchers affiliated with several universities in the U.S. has conducted a drilling study of Lake Malawi in South-East Africa and suggest their findings may help explain the large number of cichlid species that call the lake their home. In their paper published in *Proceedings of the National Academy of Sciences*, the team describes their drilling expedition, what the sediment samples showed and why they believe their findings may help explain the unusual number of related fish species.

Read more at: http://phys.org/news/2015-12-sediment-african-lake-huge-fish.html#jCp

Scientist will discuss the power of natural soil processes

Dr Maarten Stapper, an expert in soil biology, discusses the critical role of soils in sustainable agriculture with landowners. Contributed

ONE of Australia's most renowned soil scientists will head to Mackay next month to tackle all the big issues under the ground for the 2015 Healthy Soils Symposium is on at the MECC on December 1.

Symposium co-ordinator and Regional Landcare Facilitator, Reef Catchments' Dr Robyn Bell said this year would see the appearance of special guest Dr Maarten Stapper. http://www.dailymercury.com.au/news/scientist-will-discuss-power-natural-soil-processe/2849637/

Scientists fix date for earth-shattering Himalayan birth pangs

Peter Spinks

Fairfax Science Columnist

The discovery of the first oceanic microplate in the Indian Ocean has allowed scientists to precisely date the Himalayas.

The Himalayas blanketed in fresh, fluffy snow. Now we know how old the mountains really are. *Photo: Tanya Badenhorst*

A small chunk of Antarctica has helped scientists determine that the world's highest mountain chain, the Himalayas, started forming 47 million years ago when India and Eurasia smashed into one another.

This is the first time the chain's birth has been firmly dated and follows the discovery of the first Indian Ocean microplate, a diminutive form of the giant crustal plates on which the Earth's continents lie.

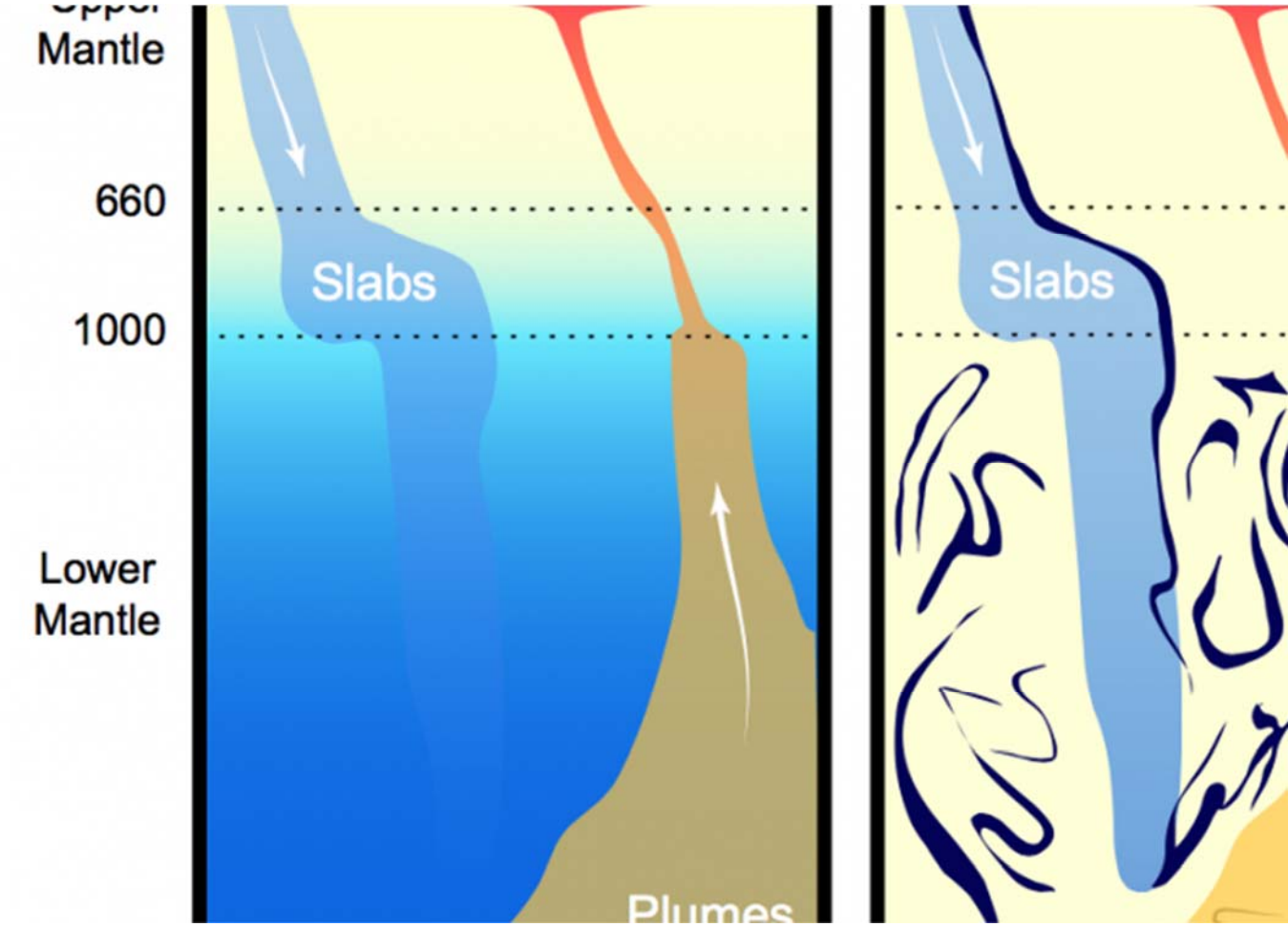
The India-Eurasia collision involved a long, protracted process which was not easy to unravel.

Dr Kara Matthews, Sydney University

Read more: http://www.smh.com.au/technology/sci-tech/scientists-fix-date-for-earthshattering-himalayan-birth-pangs-20151111-gkwcxy.html#ixzz3uGDziNPq

Twin studies provide first explanations for boundary within Earth's mantle

10 December 2015



Sinking slabs of ocean crust and rising plumes of hot rock in Earth's mantle are observed to behave differently below one megameter (1,000 kilometers) depth. Two explanations for this behavior were published on Dec. 11, 2015. At left, …more

Earth's mantle, the large zone of slow-flowing rock that lies between the crust and the planet's core, powers every earthquake and volcanic eruption on the planet's surface. Evidence suggests that the mantle behaves differently below 1 megameter (1,000 kilometers, or 621 miles) in depth, but so far seismologists have not been able to explain why this boundary exists.

Read more at: http://phys.org/news/2015-12-twin-explanations-boundary-earth-mantle.html#jCp

Earth's living and life-giving soil the focus of international event, webcast

11/30/2015

https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJlbWFpbCI6ImJyaWFuLmplbmtpbnNAZW52aXJvbm1lbnQubnN3Lmdvdi5hdSIsImJ1bGxldGluX2xpbmtfaWQiOiIxMDMiLCJzdWJzY3JpYmVyX2lkIjoiMTUyNjA0MTUzIiwibGlua19pZCI6IjQzMTgxNzA1IiwidXJpIjoiYnAyOmRpZ2VzdCIsInVybCI6Imh0dHBzOi8vd3d3LndlYmNhc3RlcjQuY29tL1dlYmNhc3QvUGFnZS82OTQvMTE5MzEiLCJidWxsZXRpbl9pZCI6IjIwMTUxMTMwLjUyMDczMTQxIn0.eecosM05lTxd_LvE3PPE57sVRyBvVFJPT5CoPl_3ibM