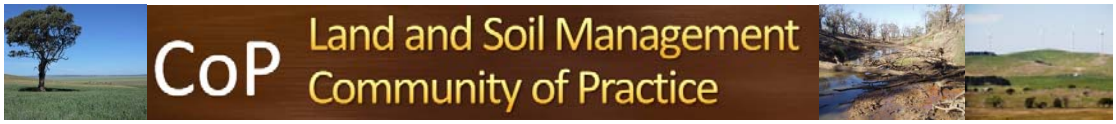


Soils to Reverse Climate Change: “Carbon Farming” and the Untapped Potential in Ecological Approaches

Andrea Basche, Kendall Science Fellow | 12 May 2016, 12:00 pm EDT

Are there agricultural practices that might offer more potential than the ones commonly discussed in the “carbon farming” conversation? In a companion post, I wrote about what the science tells us about cover cropping and reduced tillage, two practices getting a lot of attention in what I’ve called the “carbon farming” rage. Here I want to address some more agroecological practices, those that incorporate ecological principles, and what is known from field research about their ability to add carbon to the soil.

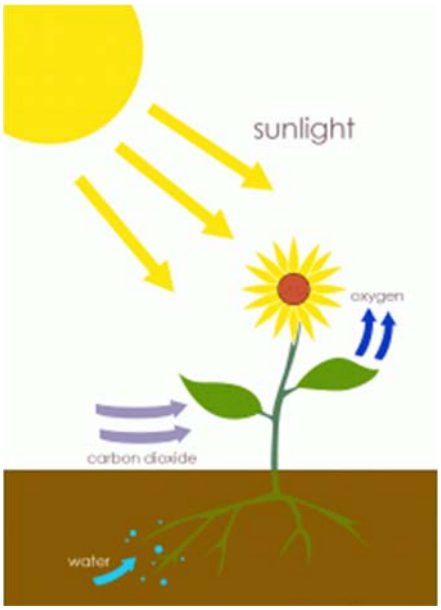
Cattle graze here on a ranch in the Sand Hill region of North Central Nebraska. Grasslands cover a large percentage of the planet and research demonstrates greater potential with improved management (such as compost additions and plant composition) to increase soil carbon.

Andrea Basche is a Kendall Science Fellow in the UCS Food & Environment program.

Soils to Reverse Climate Change: What Do We Know about “Carbon Farming” Practices?

Andrea Basche, Kendall Science Fellow | 11 May 2016, 4:45 pm EDT

“Carbon farming,” in my world as a scientist who studies soils and crop production, seems to be all the rage these days in the media. The idea is to build up carbon in soil while drawing down carbon in the atmosphere through improved soil management. This matters because building healthy soils requires adding carbon, while stabilizing the climate requires taking carbon out of the atmosphere. I want to dig—pun intended!—deeper into the nitty-gritty and discuss what we already know about a few agricultural practices that commonly come up in this discussion.



Remember photosynthesis from high school science class? Plants convert carbon dioxide from the atmosphere, sunlight and water into oxygen and carbon compounds. Carbon farming is about ensuring that the carbon that ends up in the soil is greater than what is lost from the system, either by heading to your table or going back into the atmosphere. For a beautiful and more complete version of the carbon farming concept, visit thesoilstory.com. Graphic: At09kg/BY-SA (Wikimedia) http://blog.ucsusa.org/andrea-basche/soils-to-reverse-climate-change-what-do-we-know-about-carbon-farming-practices *http://blog.ucsusa.org/andrea-basche/soils-to-reverse-climate-change-what-do-we-know-about-carbon-farming-practices*

Science and post-2015

Soil erosion may threaten global food security

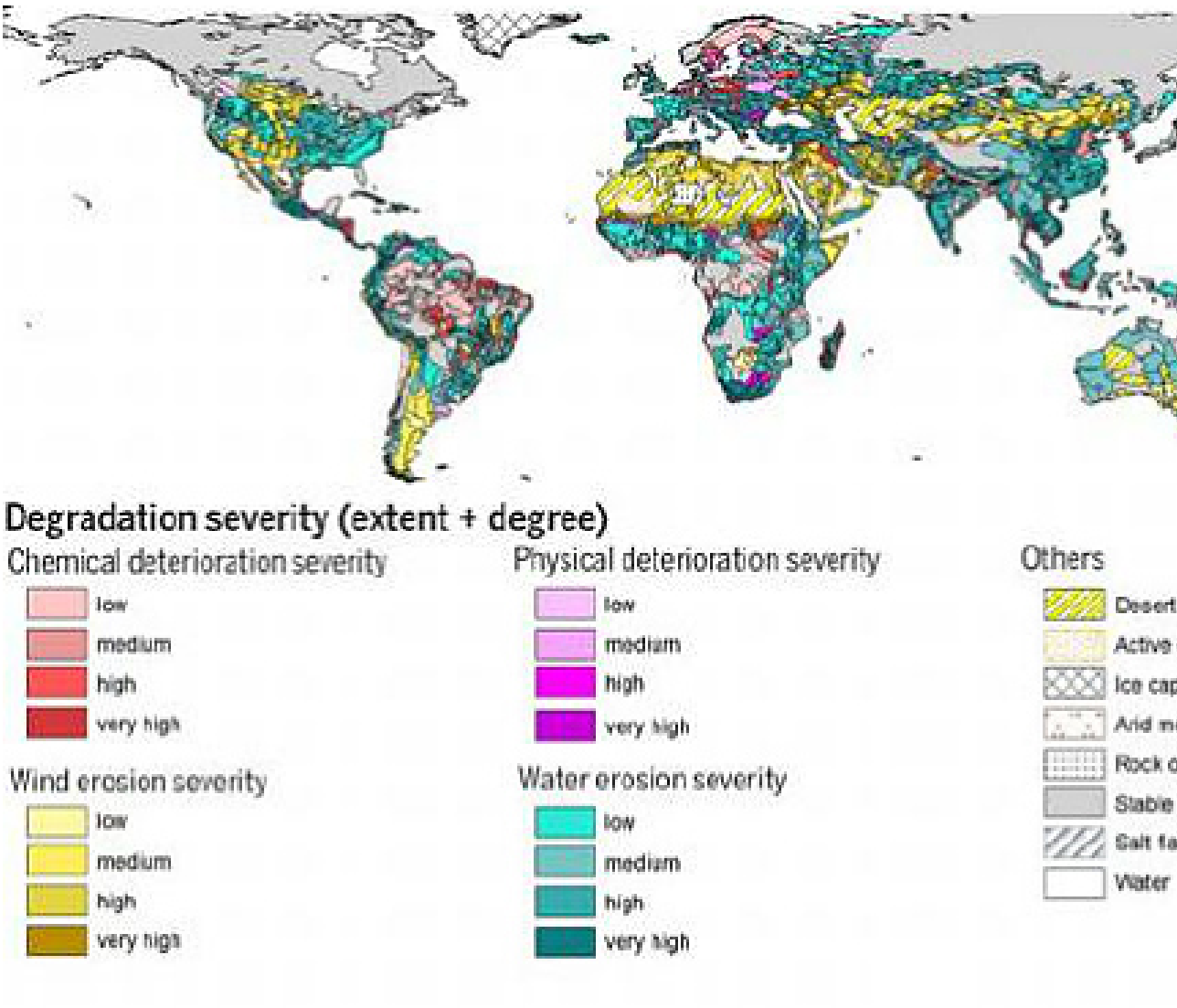
Copyright: Frederic Courbet / Panos

Speed read

- In many places, soils are being lost faster than they are being naturally made
- Rises in rock phosphate prices may cut the availability of inorganic fertiliser
- More efficient food distribution and nutrient recycling are needed to end hunger

1618

Global soil erosion has reached levels that will endanger humanity's ability to feed itself if nothing is done to lower it, a study warns.



The degradation and loss of soil around the world

http://www.scidev.net/global/farming/news/soil-erosion-threatens-global-food-security.html

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Save our soils!

John Quinton

3rd June 2016

Britain's soils are in a bad way, writes John Quinton, and the government is doing little to help - indeed its policies are making the problems worse. So concludes yesterday's Environment Audit Committee report on soil health. But are ministers bothered?

"We must move away from viewing soil merely as a growth medium and treat it as an ecosystem in its own right." Photo: John Quinton.

Some of the most productive agricultural land in England is at risk of becoming unprofitable within a generation through soil erosion and loss of carbon, and the natural environment will be seriously harmed.

When the Environment Audit Committee of the House of Commons published its report into soil health yesterday it pulled no punches. For example, it pointed out,

John Quinton *is Professor of Soil Science at the Lancaster Environment Centre, Lancaster University. He has a degree in Soil Science and a PhD in soil erosion and has spent the last 25 years researching soil processes and their links to environmental quality and food production. He is Executive Editor of the European Sciences Union's journal SOIL.*

http://www.theecologist.org/blogs_and_comments/commentators/2987747/save_our_soils.html

OUR OPINION: Soil nurture adds strength for the crops of tomorrow

Posted on **May 18, 2016** by **Daily Journal** in **Opinion**

Mississippi farmers stand among the thousands nationwide who fight a continuing battle to achieve optimum soil conditions.

The Natural Resource Conservation Service has established a new statewide soil initiative that focuses on building soil health and productivity.

Mississippi cropland, forestlands and pasturelands are eligible for this initiative and federal funds accompanying it: $150 for qualifying applicants who complete forms by June 16.

The programs help to reduce the carbon footprint, increase water infiltration and improve wildlife habitat, all helping farmers realize better crop yields.

"As the world population grows, so does the demand for food production," said Kurt Readus, NRCS State Conservationist in Mississippi. "A growing number of farmers are using soil health management systems to improve the health and functions of their soil."

http://djournal.com/opinion/opinion-soil-nurture-adds-strength-crops-tomorrow/

Corn Belt Farmers Managing Weather-Related Risks Through Greater Soil Stewardship

Gabrielle Roesch-McNally, Ph.D. Sustainable Agriculture and Sociology, UCS Science Network, UCS | 25 April 2016, 11:18 am EDT

Spring planting season in the Corn Belt reminds those of us living in the region that soil erosion is still a serious concern as we gear up for another year of intensive corn and soybean

cultivation. For example, the Environmental Working Group, with the Iowa Daily Erosion Project, estimate that millions of acres of Iowa farmland are losing dangerous amounts of soil through wind and water erosion at levels far exceeding the so-called tolerable rate of soil loss (5 tons per acre). This has serious impacts on water quality via sedimentation and carries an economic cost to farmers and to society. Soil resources are a critical part of productive and healthy agroecosystems, yet we are only beginning to truly appreciate their global importance for reducing climate related risks. Globally there is increasing recognition that we must do a better job with our soil resources by not only preventing erosion but also building soil health over the long-term.

South Dakota farmer shows off his no-till residue. Photo credit: Gabrielle Roesch-McNally.

http://blog.ucsusa.org/science-blogger/corn-belt-farmers-managing-weather-related-risks-through-greater-soil-stewardship

http://www.abc.net.au/news/2016-06-07/lewis-climate-change-and-'stormageddon'/7487464

You can't trust science! Debate.

It's not a position scientist Natalie Chapman ever thought she'd be justifying to her daughter, but an inter-school debate on the topic gave her much food for thought.

By Natalie Chapman

(Source: shironosov/iStockphoto)

When my primary school-aged daughter asked for help arguing the case for the affirmative in a debate titled 'You can't trust science', I was at a loss.

After going into shock I suggested she ask her father — a pragmatic metallurgist with an uncanny ability to retain and explain an extraordinary number of complex facts.

http://www.abc.net.au/science/articles/2015/07/28/4270728.htm

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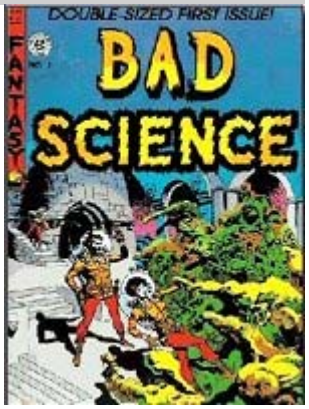
Science death spiral

By Doug Hoffman - posted Friday, 27 May 2016



Having brought mankind so far, has traditional science finally outlived its usefulness? Many seem to think so, finding the rules of the scientific method—the strict guidelines a researcher must follow to actually practice science—far too restrictive and cumbersome. The requirement that evidence be empirical, which is to say, actual measurements of nature itself, is found too burdensome to new age scientists. They prefer clean, clinical computer models to messy, often uncooperative nature. Over reliance on models, misapplication of statistical methods, and lack of repeatability are the hallmarks of the new pseudoscience that is replacing the traditional practice of science, real science. As one critic recently wrote: “The problem with science is that so much of it simply isn’t.” Has science entered a death spiral, as indifferent, inept scientists raise up new generations of even poorer researchers? The facts look grim.

Doug L Hoffman has worked professionally as a mathematician, a computer programmer, an engineer, a computer salesman, a scientist, and a college professor. Dr. Hoffman earned his undergraduate degree, a BS in Applied Mathematics, from the Florida Institute of Technology

http://www.onlineopinion.com.au/view.asp?article=18259

http://www.smh.com.au/photogallery/federal-politics/cartoons/cathy-wilcox-20090909-fhd6.html

Opinion: Healthy soils are essential for healthy lives

Written by Marcela Villarreal — last modified Mar 09, 2015 07:16 PM

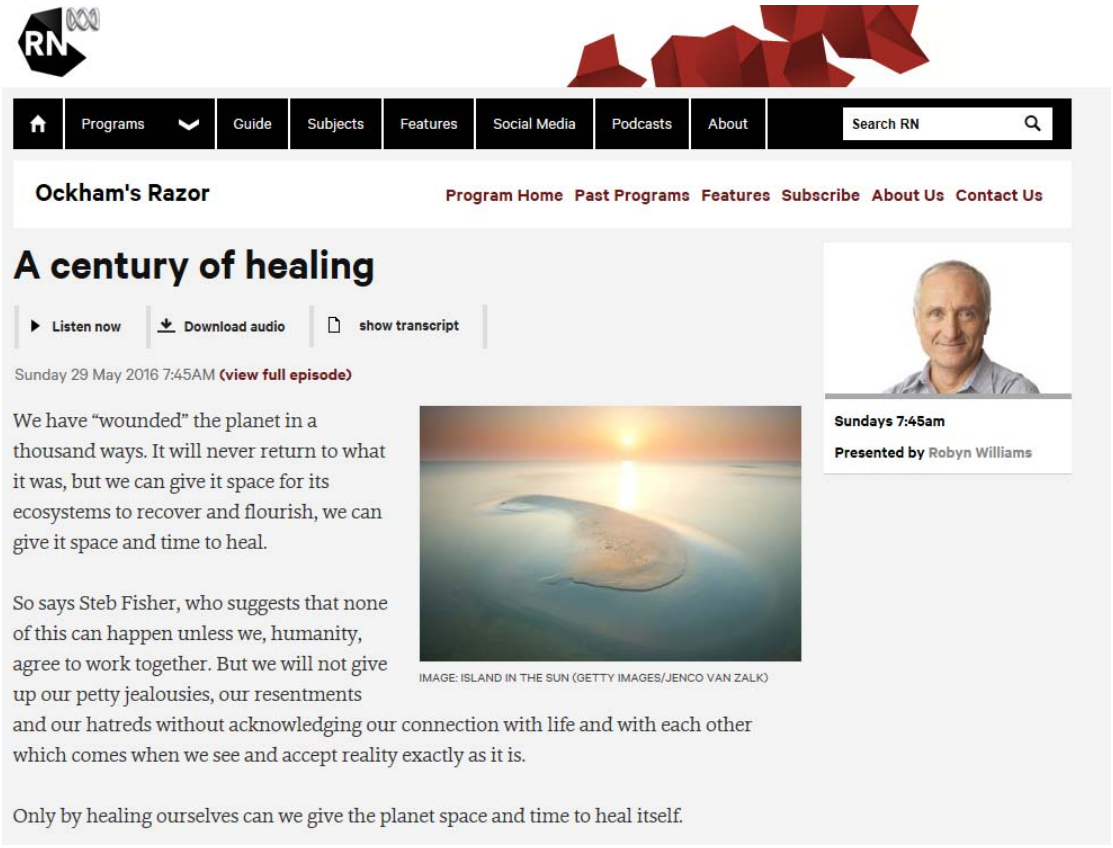
Marcela Villareal says that healthy soils are essential for healthy lives. And, there is an urge need to ensure the sustainable management of soils to ensure sustainability and food and nutrition security for all.

Farming Matters | 31.1 | March 2015

Soils are fundamental to life on Earth. They constitute the foundation of agricultural development and ecological sustainability and constitute the basis for food, feed, fuel and fibre production. Soils also provide many critical ecologi services such as clean water, nutrient cycle regulation and hydrological cycle moderation. They are the greatest pool terrestrial organic carbon, contain one quarter of global biodiversity and provide a habitat for seed dispersion and dissemination of the gene pool. Soils also provide construction materials and are the foundation for construction.

Soil is a non-renewable natural resource; its loss is not recoverable in the context of a human lifespan. The maintenar enhancement of global soil resources is essential for humanity's overarching need for food security and nutrition, clim change adaptation and mitigation and overall sustainable development.

http://www.agriculturesnetwork.org/magazines/global/soils-for-life/opinion-marcela-villarreal



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A century of healing

Listen now | Download audio | show transcript

Sunday 29 May 2016 7:45AM (view full episode)

Sundays 7:45am

Presented by Robyn Williams

We have "wounded" the planet in a thousand ways. It will never return to what it was, but we can give it space for its ecosystems to recover and flourish, we can give it space and time to heal.

So says Steb Fisher, who suggests that none of this can happen unless we, humanity, agree to work together. But we will not give up our petty jealousies, our resentments and our hatreds without acknowledging our connection with life and with each other which comes when we see and accept reality exactly as it is.

IMAGE: ISLAND IN THE SUN (GETTY IMAGES/JENCO VAN ZALK)

Only by healing ourselves can we give the planet space and time to heal itself.

http://www.abc.net.au/radionational/programs/ockhamsrazor/a-century-of-healing/7432738

OPED: Benefits of soil health extend beyond farm

HARRY CAMPBELL, Chesapeake Bay Foundation 9:37 a.m. EDT May 9, 2016

Soil scientist also known as an agronomist, looks at soil to determine its health, Virginia.(Photo: Lynda Richardson for USDA/NRCS)

Around the home and down on the farm, it’s planting season. Prime time for digging in the dirt.

Gardeners are feeling the earth under foot and between their fingers. For farmers, the crop cycle is taking root with spring plantings.

Healthy soil is key to planting success and clean water.
http://www.yorkdispatch.com/story/opinion/2016/05/09/oped-benefits-soil-health-extend-beyond-farm/84028234/

Scientific error, omission and misrepresentation: the Royal Society on GM crops

Soil Association

27th May 2016

The Royal Society has form on GM crops, writes the Soil Association - consistently Gung-ho! for the last 20 years, while refusing to engage with critics of the technology or even accept the existence of any problems. Its

latest effort represents more of the same, while exposing this once August body to ridicule for its egregious scientific howlers.


GM soy and corn are now a major export for Brazil, Argentina and other South American countries, as from this cornfield near Sao Paulo. But GMO agribusiness is having severe impacts on health and environment, and importers are increasingly demanding non-G

http://www.theecologist.org/blogs_and_comments/commentators/2987729/scientific_error_omission_and_misrepresentation_the_royal_society_on_gm_crops.html

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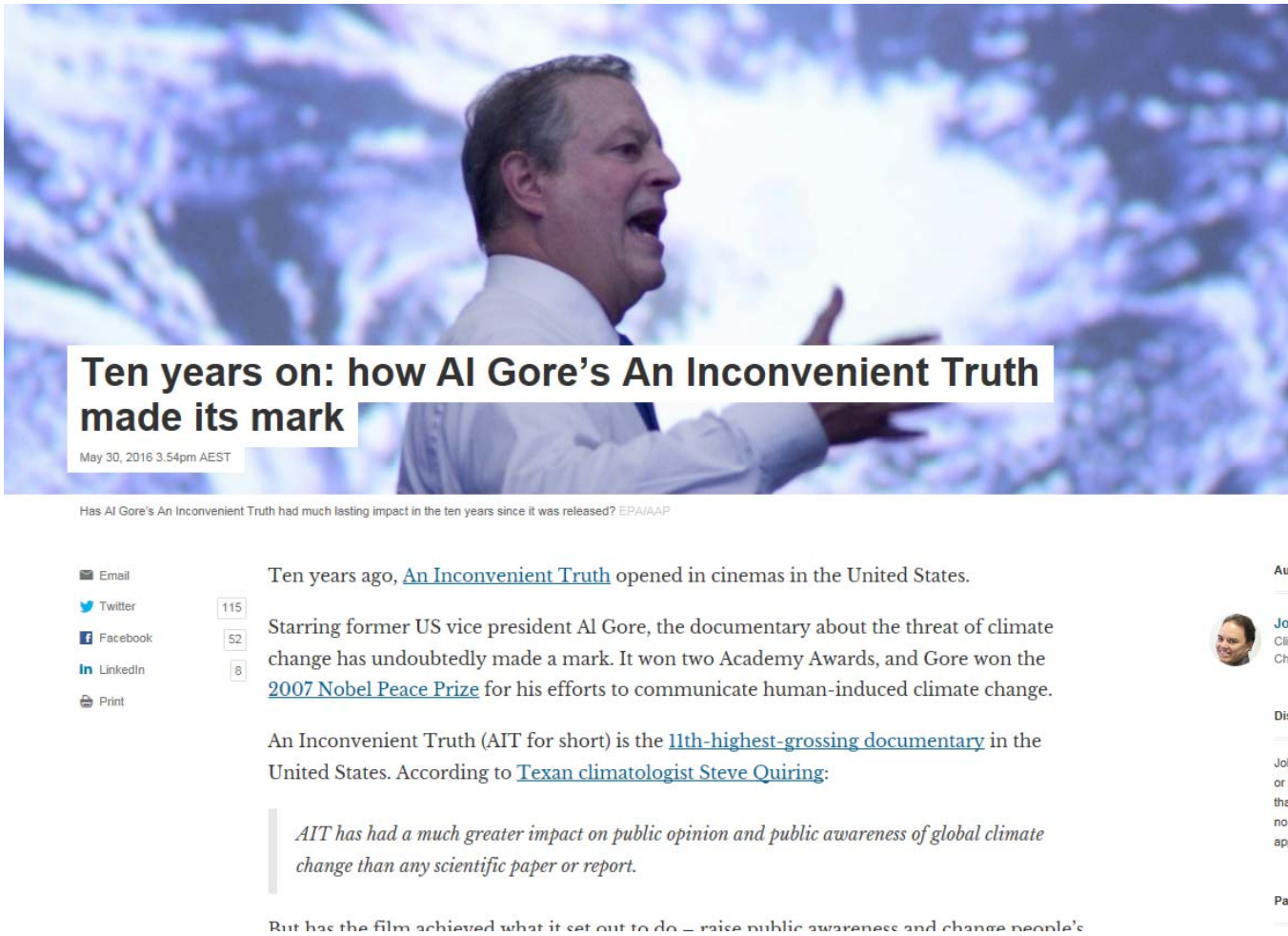
Protect against soil erosion

Kaleb Leon Guerrero and Chieriel Desamito 12:06 a.m. ChST 12 May 2016

Murky water cascades down the Ugum River in Talofofo on Aug. 19, 2015. Soil erosion can lead to murky water.
(Photo: PDN file)

Soil is one of the main components, following water and air, of what makes the Earth a beauty. Soil provides a home for micro- and macro-organisms and provides nutrients to different species of plants all around Guam.

Although, where there is a beauty component of soil to the natural environment, there is also a destructive aspect of soil caused by soil erosion. Soil erosion is the wearing away of topsoil, due to physical forces acted upon the soil by man and/or nature. http://www.guampdn.com/story/opinion/2016/05/11/protect-against-soil-erosion/84210216/



Ten years on: how Al Gore's An Inconvenient Truth made its mark

May 30, 2016 3.54pm AEST

Has Al Gore's An Inconvenient Truth had much lasting impact in the ten years since it was released? EPA/AAP

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Ten years ago, An Inconvenient Truth opened in cinemas in the United States.

Starring former US vice president Al Gore, the documentary about the threat of climate change has undoubtedly made a mark. It won two Academy Awards, and Gore won the 2007 Nobel Peace Prize for his efforts to communicate human-induced climate change.

An Inconvenient Truth (AIT for short) is the 11th-highest-grossing documentary in the United States. According to Texan climatologist Steve Quiring:

> *AIT has had a much greater impact on public opinion and public awareness of global climate change than any scientific paper or report.*

But has the film achieved what it set out to do – raise public awareness and change people's

http://theconversation.com/ten-years-on-how-al-gores-an-inconvenient-truth-made-its-mark-59387

A Boon for Soil, and for the Environment

By BETH GARDINERMAY

At a farm in Peru, charcoal from bamboo burned in special ovens is used to fertilize the soil. Carbon farming is seen as a way of replenishing depleted farmland and helping reduce damage to the environment. Credit Enrique Castro-Mendivil/Reuters

LONDON — When Gabe Brown and his wife bought their farm near Bismarck, North Dakota, from her parents in 1991, testing found the soil badly depleted, its carbon down to just a quarter of levels once considered natural in the area.

Today the Brown farm and ranch is home to a diverse and thriving mix of plants and animals. And carbon, the building block of the rich humus that gives soil its density and nutrients, has more than tripled. That is a boon not just for the farm's productivity and its bottom line, but also for the global climate.
http://www.nytimes.com/2016/05/18/business/energy-environment/a-boon-for-soil-and-for-the-environment.html?_r=0

Is Soil a Secret Weapon? On Agriculture and Climate Adaptation

Andrea Basche, Kendall Science Fellow | 31 March 2016, 2:52 pm EDT

The oldest task in human history. To live on a piece of land without spoiling it. –Aldo Leopold

Those words ring quite true to me as springtime is upon us, which means planting season for gardeners and farmers alike.

I found my way into the field of agronomy (or, agricultural science for those less familiar with the term) with a background in climate science and a passion for the environment, realizing that future change posed new challenges to agriculture and the natural resource base that it depends on. I soon came to realize that the soil was a large part of the answer I was seeking—to help food systems adapt and be more resilient to change—and that through caring for that living crust, we can alleviate other environmental burdens.

Soil science 101: the living crust of the Earth (and only a small amount for food)

I heart soil because it is an under-appreciated natural resource. Soil is definitely gaining popularity in the media (the United Nations dedicating the year of 2015 to raising awareness) but we don't hear about soil nearly as frequently as the water we drink or air we breathe.

What is soil? It is quite literally the living crust of the earth, the interface of geology, biology, and climate. Let me explain. Soil is formed on a geologic timescale, as rocks break down over time thanks to the elements that include climate—rainfall and extreme temperatures the key

http://blog.ucsusa.org/andrea-basche/agricultural-climate-adaptation

Militarism and Monsanto or Gandhi and Bhaskar Save? The agroecology alternative

Colin Todhunter

9th May 2016

The corporate war on traditional farming is nowhere fiercer than in India, writes Colin Todhunter. After decades of the 'Green Revolution' that have impoverished the nation's soils, water, biodiversity and cultivators alike, agribusiness is poised for its final strike. But now the small scale farmers who produce most of the country's food are rediscovering ancient agroecological alternatives.

Farmers on the storm ... Madhya Pradesh, 31st July 2013. Photo: Rajarshi MITRA via Flickr (CC BY).

http://www.theecologist.org/News/news_analysis/2987657/militarism_and_monsanto_or_gandhi_and_bhaskar_save_the_agroecology_alternative.html

Election FactCheck: is Australia among the only major advanced economies where pollution levels are going up?

May 25, 2016 2.57pm AEST

Was Labor's shadow environment minister, Mark Butler, right to say Australia was 'pretty much' the only major advanced economies where greenhouse pollution levels are going up? AAP/Stefsn Postles

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Australia is now pretty much the only major advanced economy where pollution levels are going up, not coming down. – Labor shadow minister for the environment, climate change and water, Mark Butler, speech to the National Press Club, May 18, 2016.

During a debate with environment minister Greg Hunt, Labor's shadow environment minister Mark Butler said that Australia is "pretty much" the only major advanced economy where pollution levels are rising.

Is he right?

Checking the sources

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http://theconversation.com/election-factcheck-is-australia-among-the-only-major-advanced-economies-where-pollution-levels-are-going-up-59731

More storms will come, so let's plan for that now

OPINION

By Barbara Norman

Updated yesterday at 12:14pm

PHOTO: Better coastal planning is required to minimise the risks that were evident when storms battered NSW's coast at the weekend. (Supplied: UNSW WRL)

The storms of the last few days have driven home how climate change can devastate our coastal communities. So it's time we developed a serious coastal planning strategy to tackle the problem now, writes Barbara Norman.

In the past few days our coastal communities and environments have been dramatically affected by storms.

http://www.abc.net.au/news/2016-06-07/norman-more-storms-will-come,-so-let's-plan-for-that-now/7484260

CHINADAILY.com.cn

Soil contamination

If environmental pollution has been compromising people's quality of life in China, soil contaminated with heavy metals is eroding the foundation of the country's food safety and becoming a looming public health hazard.

The government is reportedly making a detailed map of the extent to which the country's soil has been contaminated with heavy metals. This will hopefully facilitate action to address and remedy the problem.

A Beijing lawyer's request for information about soil contamination was turned down. The latest attempt to map out polluted areas will be conducive to more sensible and truthful responses to such requests. http://www.chinadaily.com.cn/bizchina/2013-06/14/content_16621389.htm

We're kidding ourselves if we think we can 'reset' Earth's damaged ecosystems

May 27, 2016 6.10am AEST

Pragmatism, not idealism, will give Brazil's Atlantic forests the best chance of survival. Guilmann/Wikimedia Commons

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Earth is in a land degradation crisis. If we were to take the roughly one-third of the world's land that has been degraded from its natural state and combine it into a single entity, these "Federated States of Degradia" would have a landmass bigger than Russia and a population of more than 3 billion, largely consisting of the world's poorest and most marginalised people.

The extent and impact of land degradation have prompted many nations to propose ambitious targets for fixing the situation – restoring the wildlife and ecosystems harmed by processes such as desertification, salinisation and erosion, but also the unavoidable loss of habitat due to urbanisation and agricultural expansion.

In 2011, the Global Partnership on Forest and Landscape Restoration, a worldwide network of governments and action groups, proposed the Bonn Challenge, which aimed to restore

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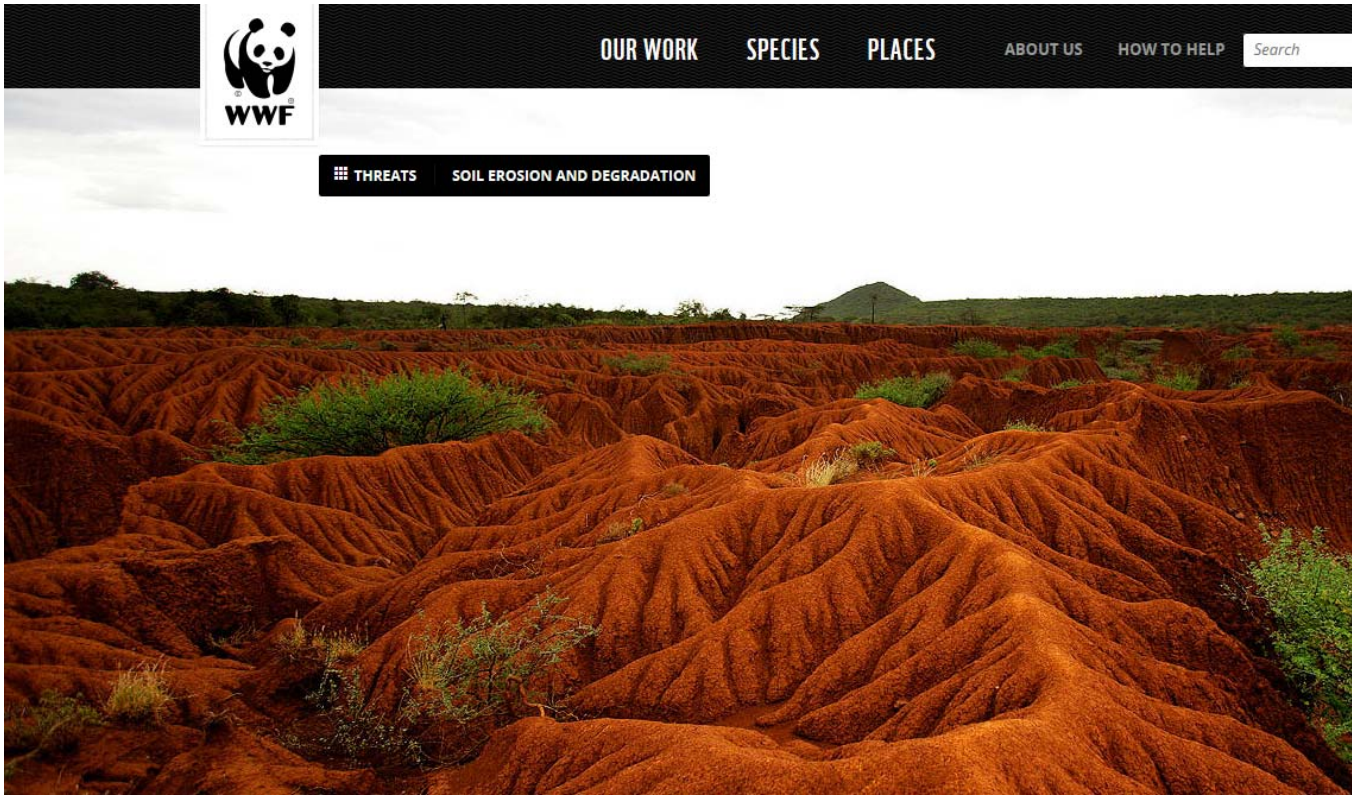
http://theconversation.com/were-kidding-ourselves-if-we-think-we-can-reset-earths-damaged-ecosystems-59972



http://www.worldwildlife.org/threats/soil-erosion-and-degradation

Soil opinion - Let's start a revolution!

Our construct of soil systems has developed rapidly in the past two decades. Now we see soil as a 'biological engine' that does a variety of work delivering services. Our understanding of soil biology has grown in strides and is advancing quickly. So far, however, this new knowledge has not been exploited much to deliver increased agricultural productivity.

Current agricultural productivity is inadequate to feed a mushrooming global population – better application of existing technologies derived from advances made in the 20th Century in soil chemistry and physics and the plant sciences can still increase yields, and there is still some scope for extending the area of farmed land. Nonetheless the consensus is that we need innovative technology to increase yields dramatically. Moreover, this yield increase has to be achieved with a shrinking environmental footprint; greenhouse gas emissions from agriculture are too important to be left out of necessary global reductions and much more efficient water use in agriculture is essential if we are to avoid urban water shortages. And our agricultural systems are reliant on oil and this commodity looks set to become increasingly costly and potentially limited as more easily exploited resources are used up. In summary, it appears we may be approaching what has been described as a 'perfect storm' in our food production unless we can make a technological leap.

Current agricultural technology is based on substitution of functions of the 'biological engine' mainly by oil-supported interventions, for example nitrogen supplied from the Haber process. This is all rather crude. It is also leaks resources, especially nitrogen. Our new knowledge of soil biology needs to be exploited to make soil a better medium for plant growth with less reliance on oil-derived inputs. How can we manipulate soil ecosystems via carbon management? What opportunities exist for nitrogen fixation and management that remain unexploited? Are there fundamentally different designs for soil-plant systems that better exploit

Professor Mark Kibblewhite

http://tmm.codecircus.co.uk/assets/1071/5939_CRA01_Soil_Opinion_FINAL.pdf

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Celebrate Soil [Opinion]

Rosemary GordonI got together with one of my friends recently and the subject of work came up. She has heard about my travels to Spain and

Germany to learn about greenhouse production, as well as my trips to see growers throughout the country and to visit seed companies to learn about the latest varieties.

As a nurse, my friend really doesn't know much about the ag industry so she always asks me lots of questions. When I talk about the issues you face, she is genuinely interested because, as she realizes, "We have to eat."

http://www.growingproduce.com/vegetables/celebrate-soil-opinion/

We can keep farmers afloat and the Murray-Darling flowing

By David Leyonhjelm - posted Thursday, 31 March 2016

As the first European to view the plains of the Riverina in 1817, John Oxley despaired of 'a country which for bareness and desolation has no equal.'

A century later he would have said the same. During the Federation Drought, in 1914, the Murray River ran dry. A century later it would have run dry again during the Millennium Drought but for the release of water from dams.

In 2010, on the other hand, the Murray Darling Basin received record breaking rain, filling dams to capacity and causing widespread flooding. Dorothea Mackellar's famous description of 'a land of droughts and flooding rains' was never more true.

David Leyonhjelm is the Liberal Democrat Senator for NSW.

http://www.onlineopinion.com.au/view.asp?article=18137

Sweden should keep coal in the ground, not sell it off

Prime minister Stefan Löfven should keep his election promise of clean energy and not let state-owned Vattenfall sell its coal mines to EPH

Environmental campaigners call on the Swedish government not to allow the sale of coal assets. Photograph: 350.org

The history of the fossil fuel industry can feel like it is told in complicated deals the public isn't meant to understand. This is what is happening in Sweden. The government-owned energy company, Vattenfall, is demanding the sale of its coal mines and power plants based in Germany to a Czech company, EPH. The deal includes some of Germany's largest coal mines - and three of the top 10 most polluting coal plants in Europe. They are going to a deeply unattractive buyer - EPH, a company hell-bent on burning as much coal as possible.

http://www.theguardian.com/environment/2016/jun/02/sweden-should-keep-coal-in-the-ground-not-sell-it-off

Fact check: Do carbon emissions always rise under the Coalition?

Updated 37 minutes ago

PHOTO: The NSW Labor Facebook page has a graphic showing carbon emissions changes under the Coalition and Labor. (NSW Labor)

MAP: Australia

The claim

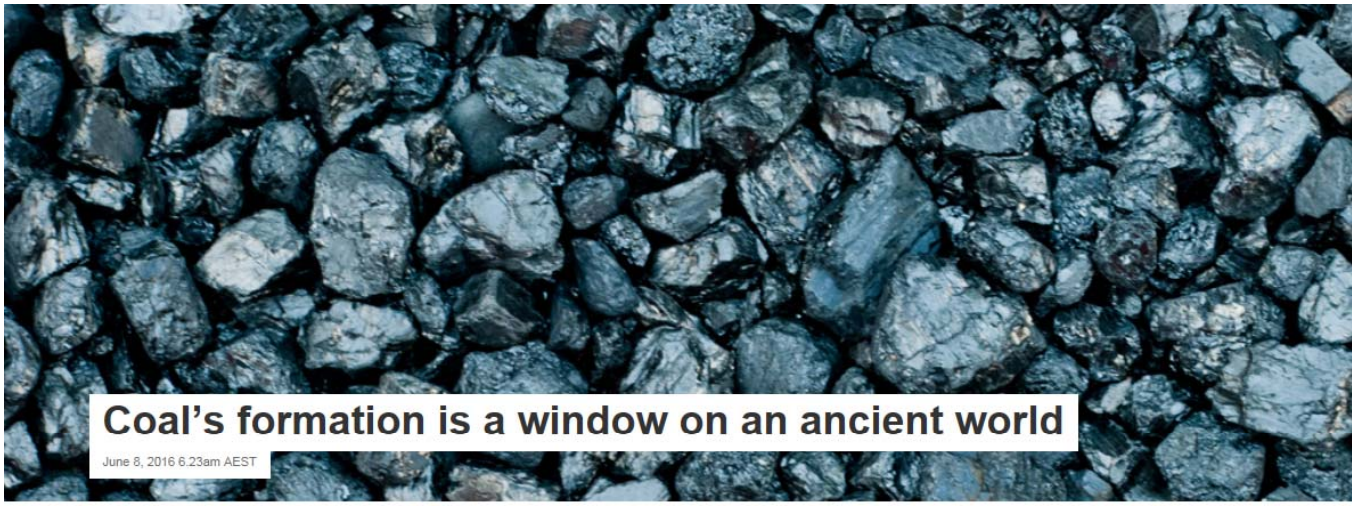
Labor is going to the election with ambitious policies on reducing carbon emissions and increasing renewable energy.

The NSW Labor Facebook page notes that "only Labor has a long term goal of net zero pollution by 2050", accompanied by an infographic on emissions changes.

"Under the Liberals emissions always go up," the banner over the advertisement claims.

Is that correct? ABC Fact Check takes a look.

http://www.abc.net.au/news/2016-06-08/fact-check-do-emissions-always-rise-under-the-coalition/7466354?section=environment



Coal's formation is a window on an ancient world

June 8, 2016 6.23am AEST

Coal has provided us with some stunning fossils. Bart Bernardes/Flickr, CC BY-NC-ND

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As the world moves to combat climate change, it's increasingly doubtful that coal will continue to be a viable energy source, because of its high greenhouse gas emissions. But coal played a vital role in the Industrial Revolution and continues to fuel some of the world's largest economies. This series looks at coal's past, present and uncertain future, starting today with how it's formed.

Love it or hate it, coal played a crucial role in launching us into the modern world by fuelling the Industrial Revolution. The byproducts of that role were, of course, the rise of greenhouse gases in our atmosphere and dangerous levels of air pollution in the big coal-fuelled cities.

http://theconversation.com/coals-formation-is-a-window-on-an-ancient-world-54333

Where could Australia genuinely innovate?

June 7, 2016 10.52am AEST

Australia could capitalise on its sun-drenched landscape to innovate in renewable energy. Shutterstock

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There is a lot of talk about innovation these days, but are we really innovating in the areas where we could generate the most benefit for Australia and the world?

What is clear is that the decline in mining revenue, the elimination of manufacturing jobs and climate-dependent uncertainties in agricultural productivity mean Australia's future prosperity cannot depend on endlessly repeating the past.

Author

Peter C. Doherty
Laureate Professor, The Peter D
Infection and Immunity

Disclosure statement

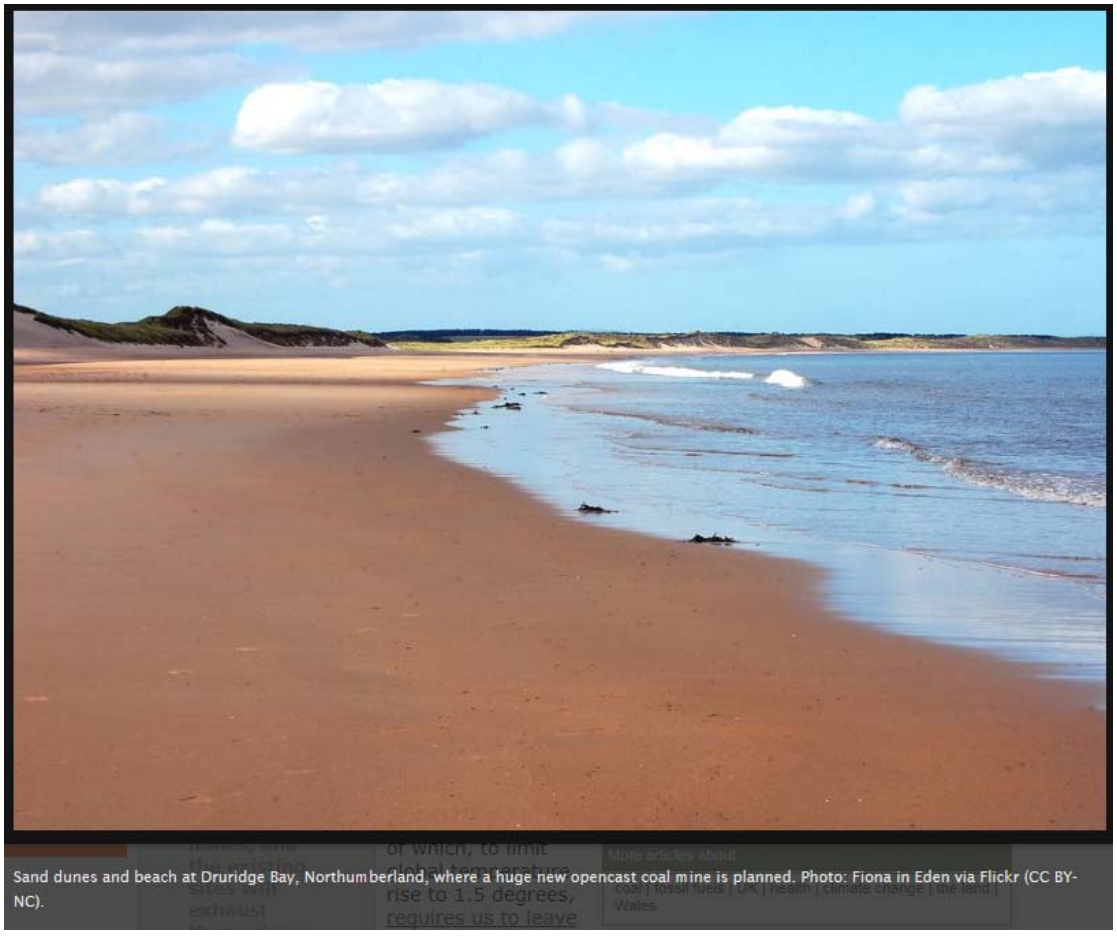
http://theconversation.com/where-could-australia-genuinely-innovate-60452

No coal, no fracking: end fossil fuel production on UK soil by 2020!

Guy Shrubsole / Friends of the Earth

16th February 2016

The government makes bold claims about tackling climate change and phasing out coal power stations, writes Guy Shrubsole. Yet it's 'relaxed' about two huge new coal mines that would produce ten million tonnes of coal, blighting landscapes and afflicting the health of vulnerable communities. It's time to say no to all onshore fossil fuel production.



Sand dunes and beach at Druridge Bay, Northumberland, where a huge new opencast coal mine is planned. Photo: Fiona in Eden via Flickr (CC BY-NC).

http://www.theecologist.org/blogs_and_comments/commentators/2987184/no_coal_no_fracking_end_fossil_fuel_production_on_uk_soil_by_2020.html

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Reporting, Analysis, Opinion & Debate

06 JUN 2016: REPORT

At 1,066 Feet Above Rainforest, A View of the Changing Amazon

A steel structure in the Amazon, taller than the Eiffel Tower, will soon begin monitoring the atmosphere above the world's largest tropical forest, providing an international team of scientists with key insights into how this vital region may be affected by global warming.

BY DANIEL GROSSMAN

Max Planck Institute for Chemistry

Views of the Amazon Tall Tower Observatory, the tallest structure in South America.

We set off before dawn with my guide, Elton Mendes, steering a battered pickup through the Amazon jungle. He reached a hand out of the window and tugged on a stick tied to the wipers, squeegeeing drizzle off the windshield.

ABOUT THE AUTHOR

Daniel Grossman is a journalis and radio and web producer who has reported from all seven continents. He is author of *Deep Water: As Polar Ice Melts, Scientists Debate How High Our Oceans Will Rise.* Previously for *Yale Environment 360*, Grossman reported on how global warming is putting tropical bir populations at risk and how two northern European cities are meeting the challenges of sea level rise.

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In Iowa, A Bipartisan Push to Become Leader in Wind Energy

Thanks to state officials who have long supported renewables, Iowa now leads all U.S. states in the percentage of its energy produced from wind. Big companies, including Facebook and Google, are takin notice and cite clean energy as a major reason for locating new facilities there.

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Why CO2 'Air Capture' Could Be Key to Slowing Global Warming

Physicist Klaus Lackner has long advocated deploying devices that extract carbon dioxide from the atmosphere to combat climate change. Now, as

http://e360.yale.edu/feature/amazon_tall_tower_observatory_view_of_changing_climate_forest/3003/

Malaysia establishes a 1-million-hectare marine park

Johnny Langenheim

The new Tun Mustapha marine park & shark sanctuary in Borneo is the biggest marine protected area in Malaysia

Tree Rock in the Tun Mustapha marine park. The new park is home to more than 250 species of hard coral and around 360 species of fish. Photograph: Eric Madeja/WWF Malaysia

Malaysia has just established the biggest marine protected area (MPA) in the country. The Tun Mustapha park (TMP) occupies 1m hectares (2.47m acres) of seascape off the northern tip of Sabah province in Borneo, a region containing the second largest concentration of coral reefs in Malaysia as well as other important habitats like mangroves, sea grass beds and productive fishing grounds.

http://www.theguardian.com/world/blog/2016/may/30/malaysia-just-established-a-one-million-hectare-marine-park

Carbon dioxide's 400ppm milestone shows humans are rewriting the planet's history

Levels of CO2 are pushing beyond 400 parts per million in the atmosphere. The last time they were there, 15 million years ago, the world was very different

The coal-fired Boxberg power station during sunset in Germany. Photograph: Florian Gaertner/Photothek via Getty Images

Round numbers can trigger all sorts of weird and sometimes irrational responses.

For example, in about 19 years time when I turn 40 there'll be some sort of celebration at which I'm told I have reached a milestone. The number can also trigger denial in those afflicted (I honestly wouldn't know*).

http://www.theguardian.com/environment/planet-oz/2016/may/20/carbon-dioxides-400ppm-milestone-shows-humans-are-re-writing-the-planets-history

http://www.smh.com.au/photogallery/federal-politics/cartoons/cathy-wilcox-20090909-fhd6.html

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CSIRO cuts: as redundancies are announced, the real cost is revealed

May 26, 2016 3.44pm AEST

Ancient air bubbles preserved in Antarctic ice. The Ellsworth Mountains Project

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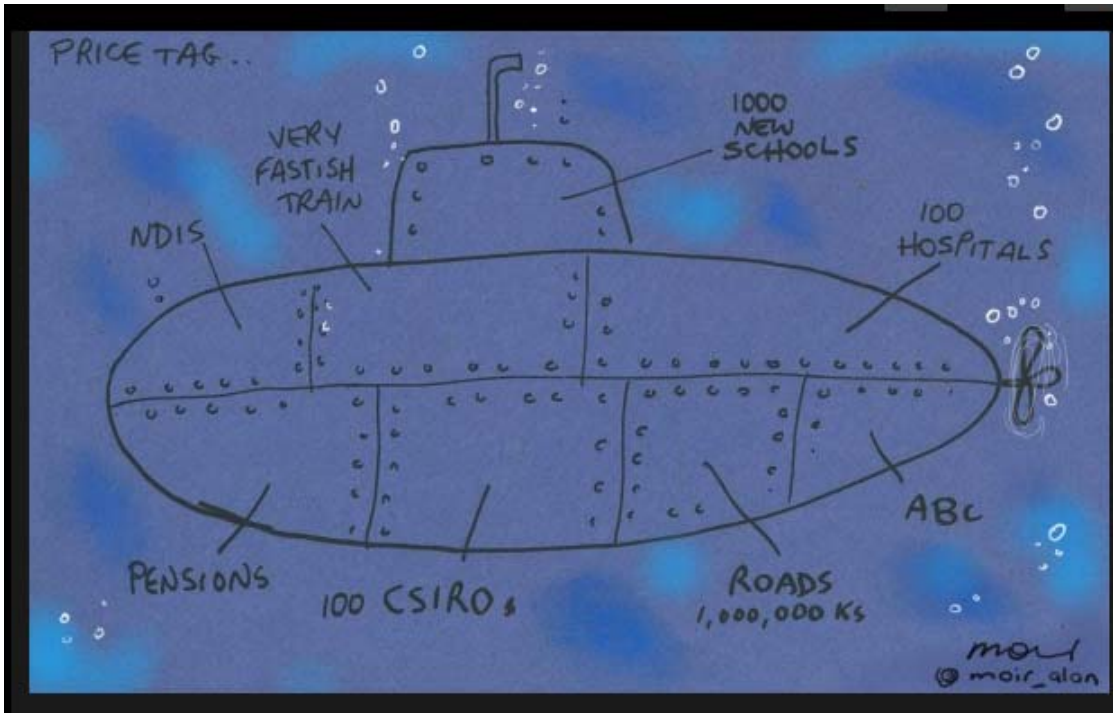
The unfortunate manner in which the latest phase of restructuring of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has played out has raised questions about Australia's scientific capability and our ability to meet international responsibilities.

Faced with a budget cut of A$115 million, some 275 staff have apparently been identified for redundancy (though the final number may be as high as 317). Many of them are scientists

http://theconversation.com/csiro-cuts-as-redundancies-are-announced-the-real-cost-is-revealed-59895



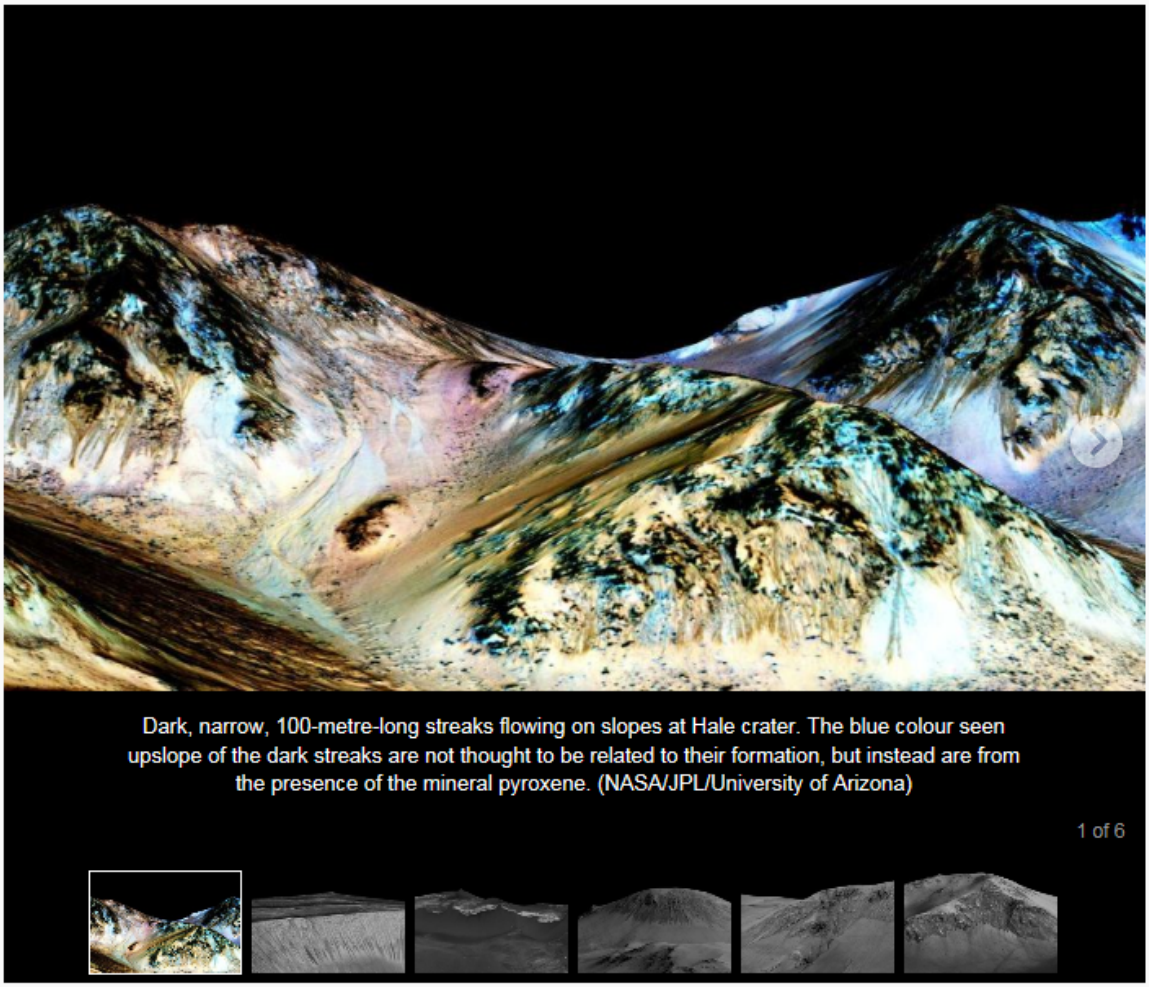
http://www.smh.com.au/photogallery/federal-politics/cartoons/alan-moir-20150921-gjrcxr.html

Finding water on Mars is huge for our search for life beyond Earth

OPINION

By Alan Duffy

Updated 29 Sep 2015, 8:18am



Dark, narrow, 100-metre-long streaks flowing on slopes at Hale crater. The blue colour seen upslope of the dark streaks are not thought to be related to their formation, but instead are from the presence of the mineral pyroxene. (NASA/JPL/University of Arizona)

1 of 6

GALLERY: Evidence of liquid water on Mars

This isn't some long-gone lake bed from a billion years ago, there is water flowing on Mars right now. This discovery is a huge step forward in our search for life, writes Alan Duffy.

NASA promised "Mars mystery solved" in a teasing announcement that set scientists and the general public into a gossiping frenzy, including myself. In a world-wide press conference at 1.30am (AEST) they didn't disappoint.

http://www.abc.net.au/news/2015-09-29/duffy-water-on-mars-is-huge-for-our-search-for-life-beyond-earth/6812008

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Reporting, Analysis, Opinion

25 MAY 2016: **OPINION**

The Case for More Ethanol: Why Green Critics Are Wrong

Former U.S. Senator Timothy Wirth and former White House Counsel C. Boyden Gray argue that environmental criticisms of corn ethanol are unwarranted and that the amount in gasoline should be increased. In rebuttal, economist C. Ford Runge counters that any revisionist view of ethanol ignores its negative impacts on the environment and the food supply.

BY TIMOTHY E. WIRTH AND C. BOYDEN GRAY

For almost as long as there have been cars, gasoline has been the dominant fuel in transportation. But for a host of reasons — environmental, climate

ABOUT THE AU

Timothy E. Wirth member of the U. House of Represe Colorado, is vice c United Nations Fo he was the founding president and CE Gray is the founding partner of the law Gray & Associates. He was White Hous President George H.W. Bush. They bot Steering Committee of the Energy Futu partnership of businesses, labor, and n advocates for alternative sources of ene ethanol.

http://e360.yale.edu/feature/the_case_for_ethanol_why_green_critics_are_wrong/2997/

YALE environment360
Reporting, Analysis, Opinion

25 MAY 2016: **OPINION**

The Case Against More Ethanol: It's Simply Bad for Environment

The revisionist effort to increase the percentage of ethanol blended with U.S. gasoline continues to ignore the major environmental impacts of growing corn for fuel and how it inevitably leads to higher prices for this staple food crop. It remains a bad idea whose time has passed.

BY C. FORD RUNGE

Ethanol, which seemed like a good idea when huge federal subsidies and mandates were put in place a decade ago, now seems like a very poor idea indeed. Yet despite years of bad ethanol reviews, some prominent figures (including former Senator Tim Wirth and attorney C. Boyden Gray in the accompanying article) offer a revanchist argument: Ethanol is not really so bad after all, and we should significantly increase its blending with gasoline from 10 to 30 percent. As Samuel Johnson remarked of a second marriage, this narrative reads like a triumph of hope over experience.

ABOUT THE A
Carlisle Ford Ru
Distinguished M
Professor of App
and Law at the U
Minnesota and a
university's Institute on the Environn
contributions to the ethanol debate in
Against Biofuels: Probing Ethanol's E
Yale Environment 360, "The Dismal
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Biofuels Could Starve the Poor" in *Fo*

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In Iowa, A Bipartisan Push to

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Without extra money, the Coalition's low-emissions roadmap is a trip to nowhere

May 26, 2016 6.12am AEST

CSIRO has the know-how to develop commercial-scale green energy, with a clear plan and enough money. CSIRO, CC BY

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On Friday, the Coalition made a low-key announcement of its new Low Emissions Technology Roadmap. To be developed by the CSIRO, it will aim to "highlight areas of growth in Australia's clean technology sector".

Unveiled jointly by the industry and science minister, Christopher Pyne, the environment minister, Greg Hunt, and the energy minister, Josh Frydenberg, the plan asks the CSIRO to identify the most promising ways to reduce emissions and to come up with plans to accelerate the development and commercialisation of Australian technologies such as solar panel components.

Author

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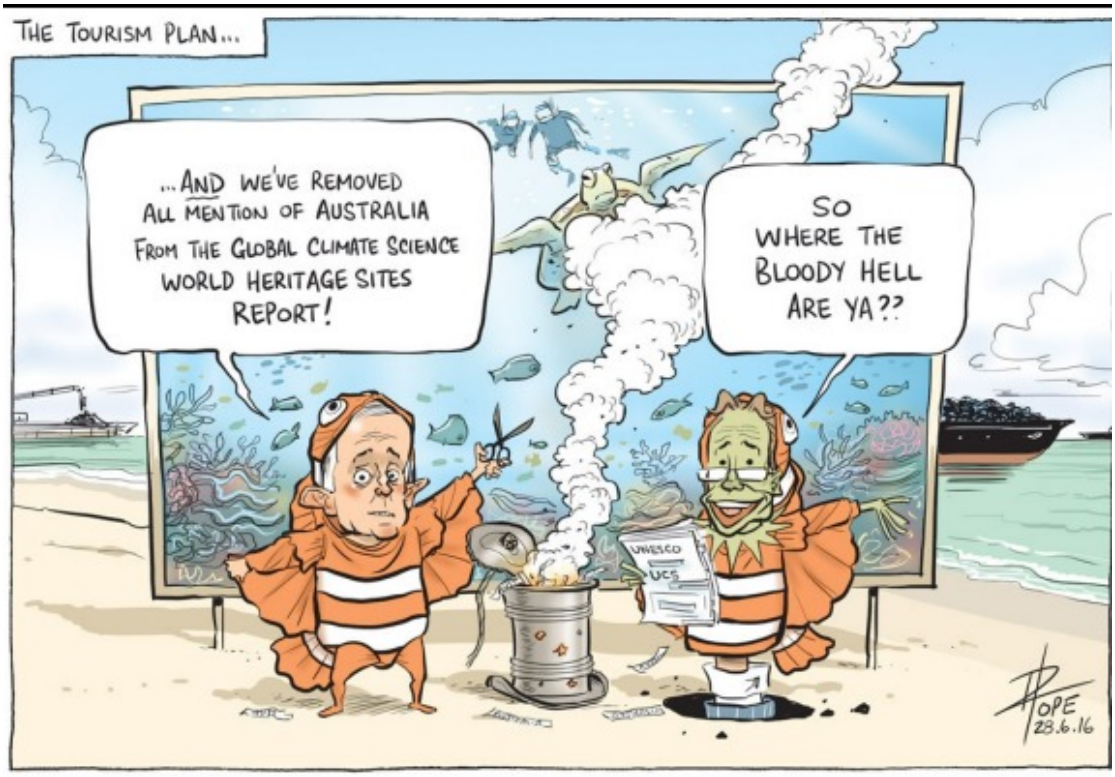
Manager, The University of Queens

Disclosure statement

Craig Froome does not work for, co
in or receive funding from any comp
organisation that would benefit from
has disclosed no relevant affiliations

http://theconversation.com/without-extra-money-the-coalitions-low-emissions-roadmap-is-a-trip-to-nowhere-59884



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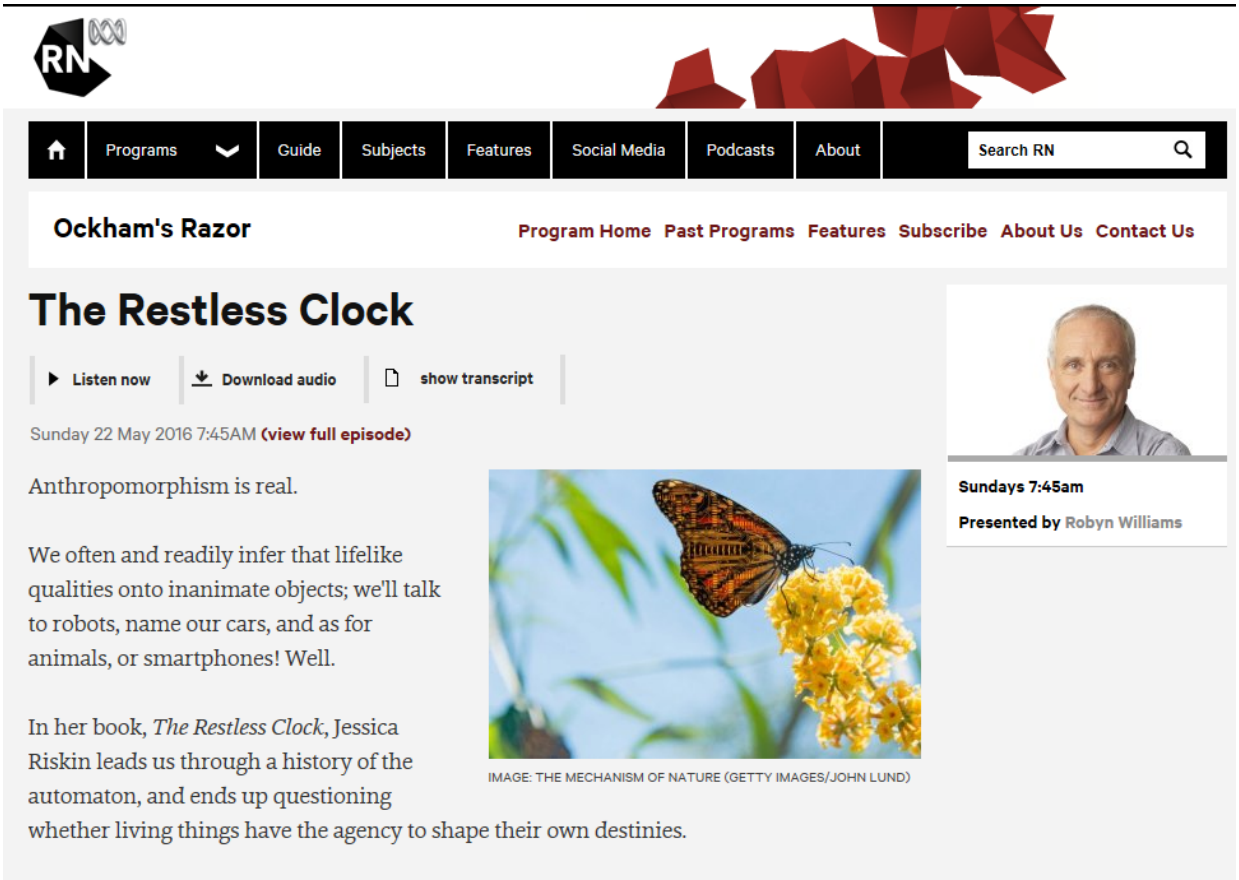
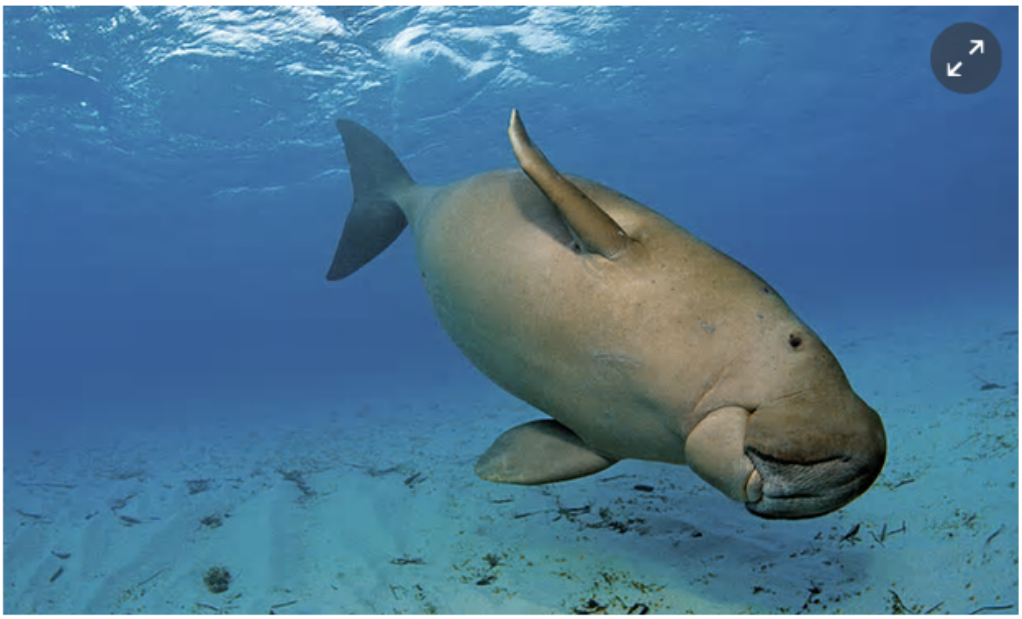


http://www.abc.net.au/radionational/programs/ockhamsrazor/the-restless-clock/7429734

Protect Myanmar's marine resources from being pillaged to point of no return

Aung San Suu Kyi's new government must safeguard the ocean from illegal fishing that has depleted stocks by 70-90% and is killing endangered sea turtles and dugongs



A dugong (*Dugong dugong*), is the cousin of manatee, and is classified as 'vulnerable to extinction'. They get caught in fishing nets and die, some are killed by cyanide poisoning. Photograph: Helmut Corneli/Alamy

As Aung San Suu Kyi's National League for Democracy (NLD) engaged in a historic transfer of power in the Myanmar capital of Naypyidaw in March, my Burmese colleagues and I stood on a deserted beach 170 miles to the southwest, near Gwa on the Rakhine coast. We were speaking to local fishermen about their livelihoods and hearing about the unfortunate death of a young dugong - southeast Asia's cousin of the manatee.

http://www.theguardian.com/environment/2016/may/20/myanmar-marine-resources-fishing-aung-san-suu-kyi

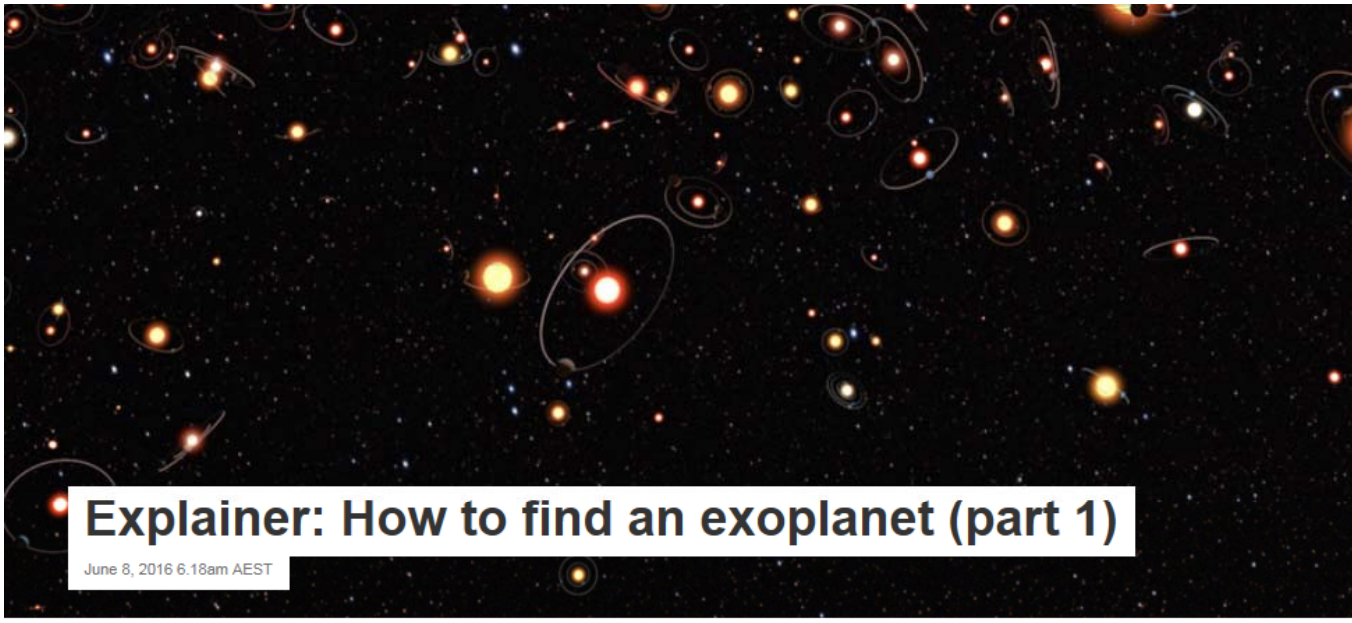
Take it with a pinch of salt – the food marketing myths we've swallowed whole

Who says breakfast is the most important meal of the day? And why does spinach make you strong? It sounds like conventional wisdom, but most of it was cooked up by ad men

Following blindly ... Improving one's vision by eating carrots is one of many food myths. Photograph: Fotosearch/Getty Images/Fotosearch RF

What came first, the chicken-is-healthy study or the eggs-are-unhealthy study? Nutritional advice is notoriously nebulous, and food groups regularly alternate between demonisation and deification. Fat makes you fat; fat makes you thin; carbs are basically crack; carbs are back. Corporate agendas are behind much of this confusion. But, more worryingly, they're also behind many of the food "facts" we take for granted. Much conventional health wisdom is actually commercialised wisdom: the result of canny marketing campaigns or industry-funded studies. Even if you think you're above advertising, immune to the seductions of pseudoscience, you would be surprised how many marketing myths you may have inadvertently swallowed.

http://www.theguardian.com/lifeandstyle/2016/jun/07/take-it-with-a-pinch-of-salt-the-food-marketing-myths-weve-swallowed-whole



Explainer: How to find an exoplanet (part 1)

June 8, 2016 6.18am AEST

In the Exoplanet Era, we are learning that planets abound in the cosmos. ESO/M. Kornmesser

The search for new planets around other star systems has been going on for decades and the results a now coming in thick and fast. So this series will look at some of the techniques astronomers use to find these exoplanets?

Just two decades ago, the discovery of the first planet orbiting another sun-like star was announced, and we entered the "exoplanet era". In the years that followed, more such planets were found. First in a trickle, then in a flood.

http://theconversation.com/explainer-how-to-find-an-exoplanet-part-1-56682

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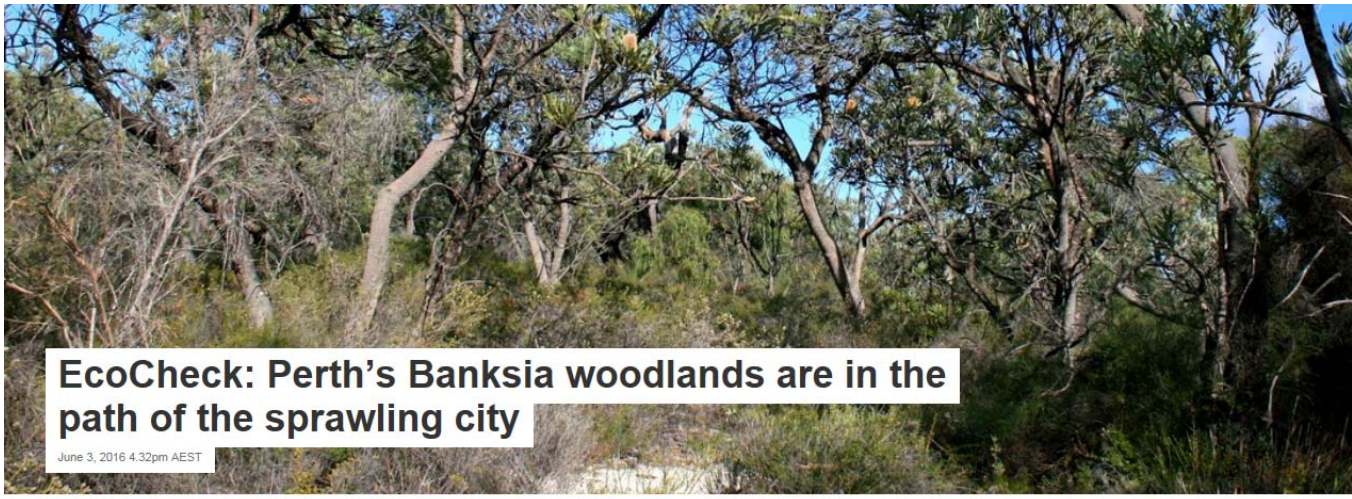

EcoCheck: Perth's Banksia woodlands are in the path of the sprawling city

June 3, 2016 4.32pm AEST

Banksia woodlands are home to thousands of plant species. Rob Davis, Author provided

Our EcoCheck series takes the pulse of some of Australia's most important ecosystems to find out if they're in good health or on the wane.

Western Australia's iconic Banksia woodlands are the predominant ecosystem along the Swan Coastal Plain – part of the southwest Australian global biodiversity hotspot, a region internationally recognised for its huge diversity of flowers and other wildlife.

With more than 2,100 plant species, 2,250 invertebrates and 256 vertebrates, these woodlands are truly unique. However, they share this coastal plain with Perth, one of the fastest-growing cities in the world. Staggeringly, the Perth-Mandurah urban corridor is larger than the official city boundaries of Los Angeles and Tokyo put together (although, in fairness, those cities' satellite regions have their share of urban sprawl too).

The Swan Coastal Plain, home to Banksia woodlands, and most of Western Australia's humans. Hesperian/IBRA/Wikimedia Commons, CC BY-SA

Greater Perth's population has crept past 2 million, across an area that extends 123km along the coast and about 30km

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http://theconversation.com/ecocheck-perths-banksia-woodlands-are-in-the-path-of-the-sprawling-city-59911

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For other uses, see Soil (disambiguation).
"Pedolith" redirects here. This is defined as "a sediment dominantly composed of transported and deposited material resulting from soil erosion".

Soil is the mixture of minerals, organic matter, gases, liquids, and countless organisms that together support plant life. Two general classes are *topsoil* and *subsoil*. Soil is a natural body that exists as part of the pedosphere and which performs four important functions: it is a medium for plant growth; it is a means of water storage, supply and purification; it is a modifier of the atmosphere of Earth; and it is a habitat for organisms all of which modify the soil.

Soil is considered to be the "skin of the earth" with interfaces between the lithosphere, hydrosphere, atmosphere of Earth, and biosphere. Soil consists of a solid phase (minerals and organic matter) as well as a porous phase that holds gases and water. Accordingly, soils are often treated as a three-state system.

Soil is the end product of the influence of the climate, relief (elevation, orientation, and slope of terrain), organisms, and parent materials (original minerals) interacting over time. Soil continually undergoes development by way of numerous physical, chemical and biological processes, which include weathering with associated erosion.

http://www.writeopinions.com/soil

"Some of the most productive agricultural land in England is at risk of becoming unprofitable within a generation through soil erosion and loss of carbon" ***John Quinton, 2016***