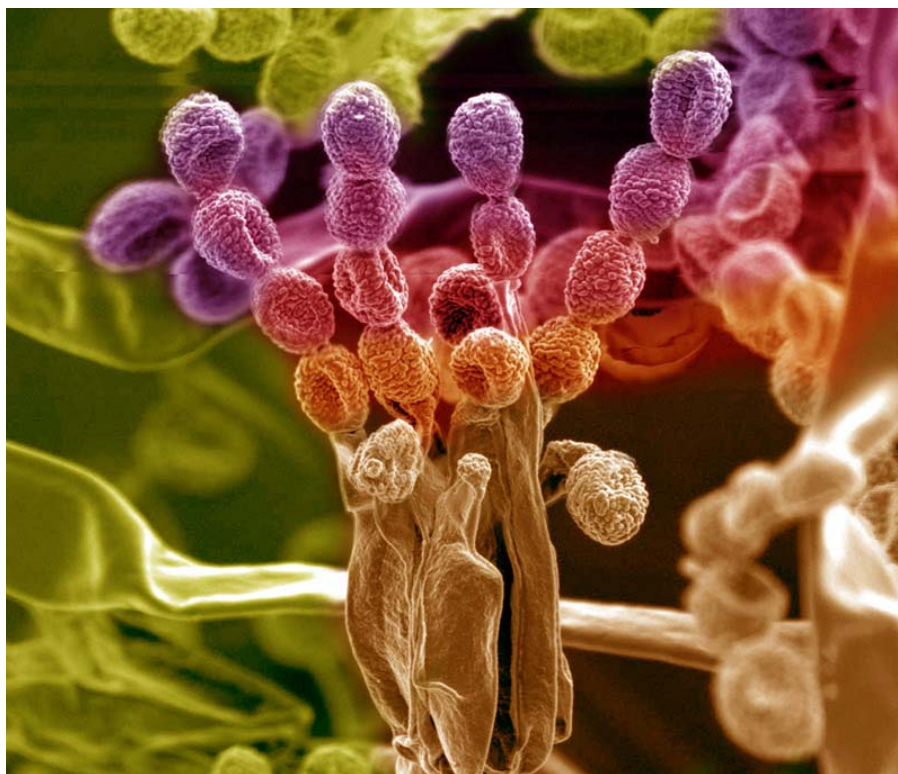


Is Climate Change Putting World's Microbiomes at Risk?

Researchers are only beginning to understand the complexities of the microbes in the earth's soil and the role they play in fostering healthy ecosystems. Now, climate change is threatening to disrupt these microbes and the key functions they provide.

BY JIM ROBBINS



The spores of an opportunistic soil fungus, *Penicillium sp.* [View gallery.](#)
Photo: PNNL

In 1994, scientists at the Pacific Northwest National Laboratory moved soil from moist, high-altitude sites to warmer and drier places lower in altitude, and vice versa. In 2011, they returned to the sites and looked again at the soil microbes and found that they had done little to adapt functionally to their new home. That's a bad sign, experts say, for a world convulsed by a changing climate.



ABOUT THE AUTHOR

Jim Robbins is a veteran journalist based in Helena, Montana. He has written for the *New York Times*, *Conde Nast Traveler*, and numerous other publications. His latest book is *The Man Who Planted Trees: Lost Groves, Champion Trees, and an Urgent Plan to Save the Planet*

http://e360.yale.edu/feature/is_climate_change_putting_world_microbiomes_at_risk/2977/

Soil is our life blood

- [Gaylord Opegard Hixton](#)
- 16 Mar 2016

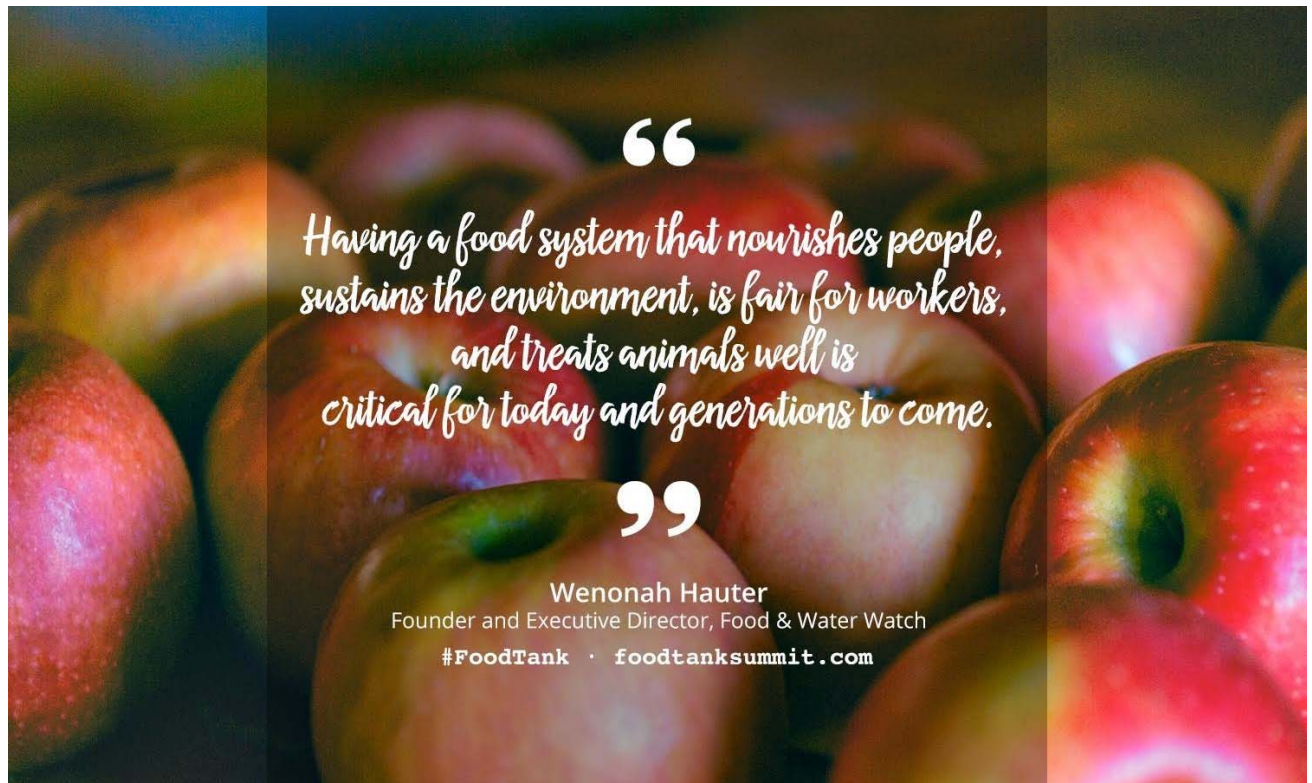
“A long habit of not thinking a thing wrong, gives it a superficial appearance of being right.” — Thomas Paine, *Common Sense*, 1776

Every now and again we need to be reminded that life has evolved with soil formation and that all life depends upon soil. Given that this non-renewable resource takes at least 500 years to form just one inch of soil, many Jackson County residents are concerned about the extraordinary soil losses associated with sand mining activities.

Using tolerable soil loss rate benchmarks quantified by using the Revised Universal Soil Loss Equation we can conservatively calculate ridge sand mining operations to be in excess of 130 tons a year. This is greater than 30 times the “tolerable” tons of soil loss every year. Degrading this natural resource base and counting it on the income side of the ledger is not sustainable. Sand mining practices expose unnecessarily large tracts of previously forested and farm land to the ravages of wind and water soil erosion. Some of the unintended consequences of this are the destruction of fragile wetland ecosystems and further contribution to the greatest source of nonpoint water pollution: soil erosion sedimentation.

http://lacrossetribune.com/jacksoncochronicle/news/opinion/soil-is-our-life-blood/article_0c69f51b-728b-55dc-8d59-1ce9c84bf92f.html

Nine Questions with Wenonah Hauter, Executive Director of Food & Water Watch



Food Tank had the chance to speak with Wenonah Hauter, the Founder and Executive Director of Food & Water Watch, who will be speaking at this year's Food Tank Summit in Washington, D.C.

Food Tank, in partnership with American University, is hosting the 2nd Annual Food Tank Summit in Washington, D.C. on April 20–21, 2016.

This two-day event will feature more than 75 different speakers from the food and agriculture field. Researchers, farmers, chefs, policymakers, government officials, and students will come together for panels on topics including food waste, urban agriculture, family farmers, farm workers, and more. <http://foodtank.com/news/2016/03/nine-questions-with-wenonah-hauter-executive-director-of-food-water-watch>



If the world's soils keep drying out that's bad news for microbes (and people)

February 9, 2016 3:10pm AEDT

The world's driest areas are tipped to get even drier, with potentially worrying implications for soil productivity. *Author provided*

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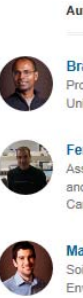
Deep beneath our feet, out of sight and out of mind, millions of tiny communities of microbes are working together to perform key functions for the ecosystem.

They provide services that are essential for human development and wellbeing, such as food and fibre production, nutrient cycling and climate regulation.

The scale of these communities is staggering. The microflora in soils are the most abundant group of organisms on Earth. A teaspoon of soil contains up to a billion bacteria, several metres of fungal filaments, and thousands of protozoa and nematodes.

Yet, like many plant and animal communities, microflora are facing new threats due to

<http://theconversation.com/if-the-worlds-soils-keep-drying-out-thats-bad-news-for-microbes-and-people-53937>



New Green Challenge: How to Grow More Food on Less Land

If the world is to have another Green Revolution to feed its soaring population, it must be far more sustainable than the first one. That means finding ways to boost yields with less fertilizer and rethinking the way food is distributed.

BY RICHARD CONNIFF



A field technician teaches sustainable agricultural practices to a farmer in Cambodia.

For researchers trying to figure how to feed a world of 10 billion people later in this century, the great objective over the past decade has been to achieve what they call “sustainable intensification.” It’s an awkward term, not least because of conventional agricultural intensification’s notorious record of wasting water, overusing fertilizers and pesticides, and polluting habitats. But the ambition this time is different, proponents say: To figure out almost overnight how to grow the most food on the least land and *with the minimal environmental impact*. The alternative, they say, is to continue plowing under what’s left of the natural world. Or face food shortages and political unrest.



ABOUT THE AUTHOR

Richard Conniff is a National Magazine Award-winning writer whose articles have appeared in *The New York Times*, *Smithsonian*, *The Atlantic*, *National Geographic*, and other publications. His latest book is *House of Lost Worlds: Dinosaurs, Dynasties, and the Story of Life on Earth*.

http://e360.yale.edu/feature/how_to_grow_more_food_on_less_land/2975/

What can be done about badly depleted nitrogen levels in Africa's soil

February 25, 2016 3:20pm AEDT



Nitrogen is one of the most important nutrients for soils and Africa doesn't have enough. Reuters/Siphiwe Sibeko

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African soils have been mined for their nutrients for far too long. Nutrients are removed in harvesting across the continent, but they aren't being returned to the soil. This usually happens in the form of manures or fertilisers. As with a bank so too with soil: if you don't deposit as much as you withdraw you'll be left impoverished.

<http://theconversation.com/what-can-be-done-about-badly-depleted-nitrogen-levels-in-africas-soil-54611>



Veggie is the most low-carbon diet, right? Well, it depends where you live

March 22, 2016 12:54pm AEDT

Beefy problem: livestock emit methane, but the soils where they graze can be much more climate-friendly than cropland. AAP Image/Caroline Duncan Photography

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It is often claimed that a vegetarian diet is better for the environment, because grazing animals such as cattle and sheep [produce a lot of methane](#), a far more potent greenhouse gas than carbon dioxide.

The areas needed for livestock grazing can also be much larger than those used for crops to produce an equivalent amount of food, so more land is cleared for meat than crops, which causes more carbon to be lost from the landscape.

<http://theconversation.com/veggie-is-the-most-low-carbon-diet-right-well-it-depends-where-you-live-54897>

Combating Poverty through Better Use of Natural Resources: IASS, IFAD and Partners Publish New Study

Global Soil Week > News and Opinion > News > [Combating Poverty through Better Use of Natural Resources: IASS, IFAD and Partners Publish New Study](#)

Natural resources are coming under increasing pressure in the face of climate change and growing global demand for raw materials. The problem is exacerbated by the unequal access to resources in many parts of the world. This poses a threat to the livelihoods of poor people in rural areas in particular. Under these circumstances, responsible and pro-poor governance of natural resources is essential. This is particularly true in the context of climate change,

because access to and the management of natural resources play a key role in adaptation strategies to climate change. IASS researchers Judith Rosendahl, Matheus Alves Zanella and Jes Weigelt stress this in their new study on Pro-poor Resource Governance under Changing Climates.



Discussion of legal documents in Bangladesh. Illegal land titles are a common problem. © Judith Rosendahl

<http://globalsoilweek.org/news-and-opinion/combating-poverty-through-better-use-of-natural-resources-iass-ifad-and-partners-publish-new-study>

Ten Questions with Simran Sethi, Author of “Bread, Wine, Chocolate”

Food Tank had the chance to speak with Simran Sethi, the author of "Bread, Wine, Chocolate: The Slow Loss of Foods We Love," who will be speaking at this year's Food Tank Summit in Washington, D.C.

Food Tank, in partnership with American University, is hosting the [2nd Annual Food Tank Summit in Washington, D.C.](#) on April 20–21, 2016.

This two-day event will feature more than 75 different speakers

<http://foodtank.com/news/2016/03/ten-questions-with-simran-sethi-author-of-bread-wine-chocolate>

Climate change

Opinion

Climate change has not been answered for farmers: we need more information, not less

Cuts to the CSIRO's climate and land and water research will make finding solutions - and making milk Australian families can afford - ever more difficult

Marian MacDonald

Marian McDonald is a dairy farmer and conservationist in South Gippsland

Tuesday 9 February 2016 10.34 AEDT



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"We knew we were stuffed early enough to do something about it, thanks to the CSIRO," author Marian MacDonald with her family on her South Gippsland farm. Photograph: Heather Downing

"... in the last decade we've definitively answered the question that the world's climate is changing. What keeps me up at night and I think what keeps most of the country up at night is what are we going to do about it? How are we going to mitigate it?" - CSIRO chief executive Larry Marshall, ABC's 7.30, February 4

Perversely, I'm pleased CSIRO chief Larry Marshall is lying in bed worrying about how to mitigate the effects of climate change. I'm only glad he's not a farmer like me, because I doubt he'd cope.

<http://www.theguardian.com/commentisfree/2016/feb/09/climate-change-has-not-been-answered-for-farmers-we-need-more-information-not-less>

IASS and Partners Propose Shortlist of Global Land and Soil Indicators to Support SDGs

Global Soil Week > News and Opinion > News > [IASS and Partners Propose Shortlist of Global Land and Soil Indicators to Support SDGs](#)

The protection of land and soils will contribute to the achievement of several Sustainable Development Goals (SDGs). It is therefore necessary to develop an appropriate monitoring and accountability framework to track the state of these resources. Finding appropriate indicators is an important part of this task, which has occupied the scientific community for the past two decades without a consensus being reached. The participants of an international expert workshop convened by the European Environment Agency (EEA) and the IASS published a “shortlist” of three land and soil management indicators on 3 March. The workshop’s outcome document, titled ‘Proposal for land and soil indicators to monitor the achievement of the SDGs’, identifies three “tiered” global indicators – land cover/land use change, land productivity change and soil organic carbon change. It supports the monitoring of these global indicators but also suggests that they must be accompanied by nationally and sub-nationally developed indicators to obtain a more comprehensive overview of the state of land and soil resources.

Please download the **“Proposal for land and soil indicators to monitor the achievement of the Sustainable Development Goals (SDGs)”** [here](#).



Photo: ©UNCCD Photo Contest 2005

<http://globalsoilweek.org/news-and-opinion/iass-and-partners-propose-shortlist-of-global-land-and-soil-indicators-to-support-sdgs>



Pixabay.com

OPINION: Deforestation, soil erosion and chemical runoff sometimes the result of farming

By **Harwood D. Schafer and Daryll E. Ray** on 21 March 2016 at 9:41 a.m.

KNOXVILLE, Tenn. — Free markets are characterized by an exchange in which both the buyer and the seller are free to engage or not engage in the transaction. Both parties to the transaction receive a benefit; the seller benefits from the money received while the buyer benefits from the product.

<http://www.agweek.com/news/3991384-opinion-deforestation-soil-erosion-and-chemical-runoff-sometimes-result-farming>

Let's act now to stop soil erosion, drought



In Summary

Drought, accompanied with soil erosion and declining soil fertility exacerbated by both human activities and climatic variations, has undermined the people's living conditions, especially those that are solely dependent on agricultural production.

Tanzania, like most developing countries, has been experiencing severe drought for years. This has greatly affected the country's capacity for food production and ultimately has affected the country's food security.

undermined the people's living conditions, especially those that are solely dependent on agricultural production.

Drought, accompanied with soil erosion and declining soil fertility exacerbated by both human activities and climatic variations, has

Over decades, human behaviour has had an adverse effect on the environment, leading to climate change which is the main contributor to increasing temperatures, changing rainfall patterns and increased occurrences of droughts and floods.

<http://www.thecitizen.co.tz/oped/Let-s-act-now-to-stop-soil-erosion--drought/-/1840568/3117584/-/lbajuwz/-/index.html>

How Forest Loss Is Leading To a Rise in Human Disease

A growing body of scientific evidence shows that the felling of tropical forests creates optimal conditions for the spread of mosquito-borne scourges, including malaria and dengue. Primates and other animals are also spreading disease from cleared forests to people.

BY JIM ROBBINS



CHAIDEER MAHYUDDIN/AFP/Getty Images

An area of forest in Indonesia that was cleared to make way for an oil palm plantation.

http://e360.yale.edu/feature/how_forest_loss_is_leading_to_a_rise_in_human_diseases_malaria_zika_climate_change/2965/

Welcome to the climate emergency: you're about 20 years late

February 2016 saw global warming records tumble with new data suggesting more Australians think humans are the cause



📷 Charred trees and bushes stand amid the aftermath of a bushfire near One Tree Hill in the Adelaide Hills in January 2015. Photograph: Brenton Edwards/AFP/Getty Images

Everywhere you look right now, the Earth's climate system seems to be breaking records.

To choose the most inappropriate metaphor possible, [February 2016 would have been enough to bring a lot of climate watchers out in a cold sweat.](http://www.theguardian.com/environment/planet-oz/2016/mar/18/welcome-to-the-climate-emergency-youre-about-20-years-late)

<http://www.theguardian.com/environment/planet-oz/2016/mar/18/welcome-to-the-climate-emergency-youre-about-20-years-late>

On their farmland in Indiana and Ohio, Carrie Vollmer-Sanders and her family have been taking agricultural practices to a more sustainable level. Photo © Tonya Marie Photography.



On their farmland in Indiana and Ohio, Carrie Vollmer-Sanders and her family have been taking agriculture to a sustainable level. Photo © Tonya Marie Photography.

Toil with the Soil: One Family's Farm Leaving a Lasting Legacy

By Carrie Vollmer-Sanders | Opinion | March 14, 2016

Growing up on a farm, I had dreams of living in a big city or abroad and working a job that would make a difference in the world. In my case, all roads led to home — the rural Midwest — where I grew up alongside my family, making a difference in the world by improving soil health, growing food, and safeguarding our streams and rivers.

- See more at: <http://blog.nature.org/conservancy/2016/03/14/toil-with-the-soil-one-family-s-farm-is-leaving-a-lasting-legacy-4/#sthash.iOwnAl6Y.dpuf>

How people can live next to lions without killing them – new study

March 23, 2016 11.41pm AEDT



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There is a sense of haunting to the roar of a lion veiled in darkness. The emphatic “oooo” demands attention as it starts in the abdomen and reverberates through the night air. Its direction and distance are secondary to one’s primordial reaction – a sudden dilation of pupils and a flare of prickles on the neck. The call unmistakably announces a large carnivore, yet as each roar fades into solitary grunts it feels less like an act of aggression than lonely imploring of a lost soul in the darkness.

<http://theconversation.com/how-people-can-live-next-to-lions-without-killing-them-new-study-56638>

FactCheck Q&A: is Australia the world leader in household solar power?

March 28, 2016 9:58am AEDT



Energy Minister Josh Frydenberg, speaking on Q&A. Q&A

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The Conversation is fact-checking claims made on Q&A, broadcast Mondays on the ABC at 9:35pm. Thank you to everyone who sent us quotes for checking via [Twitter](#) using hashtags #FactCheck and #QandA, on [Facebook](#) or by [email](#).

<http://theconversation.com/factcheck-qanda-is-australia-the-world-leader-in-household-solar-power-56670>

How 'Natural Geoengineering' Can Help Slow Global Warming

Authors



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Reviewer



Kylie Catchpole
Associate Professor of Energy National University

Disclosure statements

Anna Bruce received funding from the Renewable Energy Australia Australian PV Institute Project, and continues to work on a project on behalf of ARENA.

Iain MacGill is a Joint Director of the Centre for Energy and Environment. The Centre has received funding from government sources, the Australian Research Council and the ARENA Advisory Board. Iain has provided support for the development of renewable energy and initiatives for funding unpaid expert advice to industry organisations, industry groups in the clean energy sector internationally. His research is funded by the Australian Government.

An overlooked tool in fighting climate change is enhancing biodiversity to maximize the ability of ecosystems to store carbon. Key to that strategy is preserving top predators to control populations of herbivores, whose grazing reduces the amount of CO₂ that ecosystems absorb.

BY OSWALD J. SCHMITZ



The annual wildebeest migration in Kenya.



ABOUT THE AUTHOR **Oswald J. Schmitz** is the Oastler Professor of Population and Community Ecology at the Yale School of Forestry & Environmental Studies and the director of the Yale Institute for Biospheric Studies

http://e360.yale.edu/feature/how_natural_geo-engineering_can_help_slow_global_warming/2951/

Pause in global temperatures ended but carbon dioxide not the cause

By [Jennifer Marohasy](#) - posted Monday, 21 March 2016

There are different methods for measuring global temperatures. The satellite record as compiled by meteorologists from the University of Alabama, Huntsville (UAH), is used by the United Nation's Intergovernmental Panel on Climate Change. This is the temperature time series most often quoted by those sceptics of anthropogenic global warming.

Republican Senator Ted Cruz made much of the 18-year long pause in [this record](#) of his cross-examination of Sierra Club President Aaron Mair at a US Senate subcommittee meeting late last year.

Jennifer Marohasy is a senior fellow with the Institute for Public Affairs

Australia news

Bush mail

Climate change is spoken of in hushed tones, but it wasn't always this way

Farming communities still differ widely in their opinions on the environment, despite clear awareness some years ago

Gabrielle Chan

[@gabriellechan](#)

Monday 27 January 2014 14:59 AEDT



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Those in agriculture are not universally dismissive of the need to act on climate change, despite the perception it is linked to the left side of politics. Photograph: Ashley Whitworth/Alamy

There is a term that is not generally used in polite company in the bush. That term is climate change.

To an outsider's eyes, it might seem to be counterintuitive. Here are people whose living is mostly dependent on the vagaries of the weather. Yet you will hear more conversation about climate change at a city dinner party than a lazy Sunday afternoon lunch in the bush.

The publicly reported attitudes to climate change in rural Australia have been just as confusing.

CSIRO is poised to slash climate research jobs – experts react

February 4, 2016 3:16pm AEDT



A reported 350 jobs will be cut from CSIRO's staff. David McClenaghan/CSIRO/Wikimedia Commons, CC BY

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CSIRO is set to cut dozens of jobs from its climate research units, as part of a wider series of job losses.

In a message to staff, chief executive Larry Marshall said that the question of human-induced climate change has largely been answered, and outlined a list of new priorities for the agency, including health, technology, and “big data” research fields such as radioastronomy.

<http://theconversation.com/csiro-is-poised-to-slash-climate-research-jobs-experts-react-54170>

Can Data-Driven Agriculture Help Feed a Hungry World?

Agribusinesses are increasingly using computer databases to enable farmers to grow crops more efficiently and with less environmental impact. Experts hope this data, detailing everything from water use to crop yields, can also help the developing world grow more food.

BY JOHN ROACH

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Disclosure statement

Sarah Perkins-Kirkpatrick is a research fellow at the Australian Research Council.

Clive Hamilton is a member of the Australian Research Council.

Ian Lowe is a past president of the Australian Conservation Foundation.

Kevin Walsh receives funding from the Australian sources, including the private industry.

Neville Nicholls has received funding for climate research from various sources.



United Soybean Board

An agronomist and farmer review computer data while inspecting soybeans in Missouri.

ABOUT THE AUTHOR

John Roach is a Seattle-based journalist. He has contributed to National Geographic News since 1998 and spent the past five years covering technology, science, and the environment in blogs, news stories, and features for NBC News Digital. He formerly was on the staff of the Environmental News Network

http://e360.yale.edu/feature/can_data-driven_agriculture_help_feed_a_hungry_world/2969/



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Australia's little sister of the grasses

[▶ Listen now](#) [↓ Download audio](#) [📄 show transcript](#)

Sunday 13 March 2016 7:45AM ([view full episode](#))

One of Australia's smallest plant families – small in membership, not size (it consists of just three species) – is burdened with something of a cumbersome name; the *Ecdeiocoleaceae*.

This week, Dr Barbara Briggs leads us on the ecdeis' journey through time.

Dr Briggs has been with the Royal Botanic Garden Sydney since 1959. She was their first female PhD, following the lead of her mother, who was the first Australian woman to graduate with a physics degree.



IMAGE: THE ECDEIOCOLEACEAE (SUPPLIED/BARBARA BRIGGS)



Sundays 7:45am

Presented by Robyn Williams

<http://www.abc.net.au/radionational/programs/ockhamsrazor/australia%E2%80%99s-little-sister-of-the-grasses/7229922>



The Rio Curipí meets the Rio Uaçá on its way to the Atlantic Ocean, in the Oiapoque indigenous region of the Brazilian Amazon. credit: ©Haroldo Palo, Jr.

Can Healthy Rivers and Hydropower Co-exist?

By Brian McPeck | Global Solutions | March 1, 2016

Experts predict that we will be 9 billion people sharing one planet by 2050. Where will we find enough energy to power our growing population?

Forward-thinking leaders looking for ways to balance economic growth and environmental protection are making major investments in low-carbon energy solutions like wind, solar and hydropower. Over the next 30 years, global hydropower capacity is predicted to double. The expansion of dams could impact more than 300,000 kilometers of rivers worldwide and many proposed dams overlap, almost perfectly, with some of the planet's most naturally diverse

<http://blog.nature.org/conservancy/2016/03/01/can-healthy-rivers-and-hydropower-co-exist/>



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Science and its sceptics

▶ Listen now | Download audio | show transcript

Sunday 20 March 2016 7:45AM [\(view full episode\)](#)

Has society lost trust in the institution of science?

And if it has, what can be done to buck the trend?

PhD student Diana Zafirache sits down to dinner with a table of science deniers, and challenges their objections to rationality.




IMAGE: QUESTIONING SCIENCE (GETTY IMAGES/HERO IMAGES)



Sundays 7:45am
Presented by Robyn Williams

<http://www.abc.net.au/radionational/programs/ockhamsrazor/science-and-its-sceptics/7259202>

Clean soil 'should be top priority'

By Yang Jian | 4 March 2016, Friday |  PRINT EDITION

DECONTAMINATING soil at former industrial sites should be as high a priority as tackling air pollution, said the head of Shanghai's environment watchdog yesterday, urging the government to enact a law requiring that properties meet safety standards before new developments are permitted to go ahead.

"Soil pollution is as urgent a problem as air and water pollution," Zhang Quan, director of the Shanghai Environmental Protection Bureau, told Shanghai Daily. "It is also no easier to treat soil than it is to treat air and water."

The city needs to build on what it learned from the rehabilitation of a local steel foundry site (No.3 plant of Baosteel Group) that was contaminated with heavy metals to accommodate the eco-friendly Shanghai World Expo 2010, he said.

<http://www.shanghaidaily.com/metro/environment/Clean-soil-should-be-top-priority/shdaily.shtml>



New laws for the high seas: four key issues the UN talks need to tackle

March 28, 2016 8:46am AEDT

The oceans are teeming with life and potential – but the high seas are still largely ungoverned. Les Watling/NOAA, Author provided

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United Nations negotiations begin today in New York on the elements of an [international agreement](#) to govern the conservation and sustainable use of the high seas.

Every country will have a seat at these [inaugural negotiations](#) on conservation beyond their borders. More than half of the world's ocean lies outside national jurisdictions, and this vast wilderness is the legal equivalent of the Wild West.

Nations and corporations look beyond national boundaries for deep-sea minerals, new drug compounds and, of course, for fish to catch. Tensions can arise when these commercial interests overlap with one another, or with conservation efforts.

<http://theconversation.com/new-laws-for-the-high-seas-four-key-issues-the-un-talks-need-to-tackle-56298>



How long can the UK's coal industry survive?

Scotland's last coal power station is set to close and by the end of the year just six UK stations will remain. But in a challenging market, can these keep firing until the government's 2025 deadline for the end of UK coal?



📷 Longannet power station. Scotland will on Thursday witness an end to the coal age which fired its industrial revolution with the closure of the plant Photograph: Jeff J Mitchell/Getty Images

At 3pm on Thursday, the turbines of [Scotland's last coal power station at Longannet will spin for the last time](#). Coal, the lifeblood of the British economy for more than two centuries and now a terrible burden on the climate, is drawing its final breaths before an inevitable death. The question is: how long can it cling on?

<http://www.theguardian.com/environment/2016/mar/24/how-long-can-the-uks-coal-industry-survive>

Climate change warnings for coral reef may have come to pass, scientists say

As coral bleaching threat is raised for Great Barrier Reef, experts say events show that dire projections for reefs under global warming were not alarmist



📷 Coral on Australia's Great Barrier Reef seen suffering from bleaching in 1998. Bleaching occurs when ocean temperatures pass a threshold that affects the tiny animals which give coral its brilliance. Photograph: HANDOUT/Reuters

After almost two years of coral bleaching, with some reefs bleaching twice and possibly three times since 2014, scientists have said that dire predictions of global coral decline made almost two decades ago may now be manifest.

<http://www.theguardian.com/environment/2016/mar/22/climate-change-warnings-coral-reef-great-barrier-reef-experts-projections-scientists>

Joint low-carbon declaration sees climate baton pass from Obama to Trudeau

US-Canadian initiative brightens chances of success for Paris climate agreement and casts Justin Trudeau as Obama's heir in terms of global climate action



Barack Obama welcomes the Canadian prime minister, Justin Trudeau, outside the White House on Thursday. Photograph: Mark Wilson/Getty Images

A joint US-Canadian declaration to help spur the transition to a low carbon economy passed the baton of global climate action from Barack Obama to [Justin Trudeau](#) on Thursday - and brightened prospects for the Paris agreement.

<http://www.theguardian.com/environment/2016/mar/11/joint-low-carbon-declaration-sees-climate-baton-pass-from-obama-to-trudeau>

Google seeks facts, but a higher truth is not so easy

OPINION

By Dr Paul Willis

Posted 30 Sep 2015, 11:54am

A Google algorithm is searching for truth, how to identify it and how to present it. But will it be enough to weed out the plethora of science misinformation on the internet and will it stifle debate, asks Paul Willis.

Science isn't about truth, it is based on the premise that you can't prove a hypothesis to be true, you can only show that it is wrong (if it is wrong).

Understanding anything in science is provisional; we accept it as being correct as long as we can't show that it is wrong.

One way we can test this is through **consilience**: do independent lines of research arrive at the same or similar conclusions?



PHOTO: The need for built-in bull-dust detectors is great, but that should not be confused with our innate desire to seek the truth. (Reuters)

<http://www.abc.net.au/news/2015-09-30/willis-google-seeks-facts,-but-a-higher-truth-is-not-so-easy/6815878>

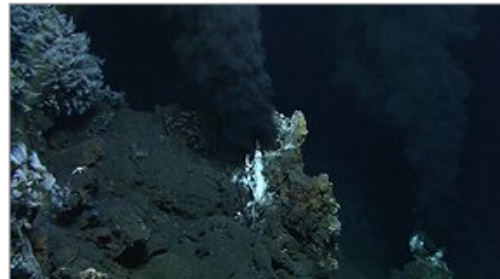
Evolution of complex life on Earth, take 2?

A mysterious cell from the deep defies classification, but it ticks all the boxes for an organism in the process of evolving from bacteria to more complex life, writes Nick Lane.

More than 1,200 metres deep in the Pacific Ocean off the coast of Japan lies an underwater volcano named Myojin Knoll. A team of Japanese biologists have been trawling these waters for more than a decade, searching for interesting life forms.

By their own account, they didn't find anything terribly surprising until May 2010, when they collected some segmented worms clinging to a hydrothermal vent.

It wasn't the worms that were interesting but the microbes associated with them. Well, one of the microbes - one cell that looked a lot like a eukaryote (the kind of complex cell found in all animals, plants, algae and fungi), until they looked at it more closely. Then it became the most teasing enigma.



The intriguing life form *Parakaryon myojinensis* was discovered near a hydrothermal vent like this one in the western Pacific Ocean. (Source: MARUM, University of Bremen and NOAA-Pacific Marine Environmental Laboratory)

<http://www.abc.net.au/science/articles/2015/08/31/4292949.htm>

Industrialised nations must lead an exit strategy for fossil fuels

Energy efficiency and renewables are indispensable weapons in the fight against climate change, but the real challenge is keeping fossil fuel reserves in the ground

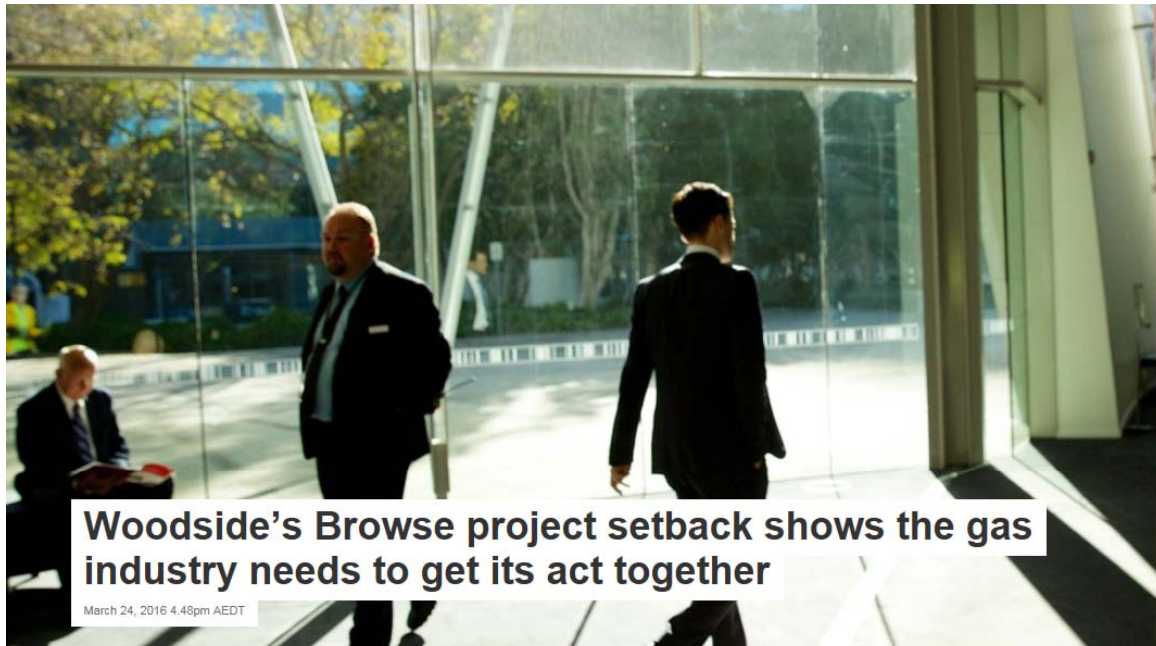


📷 Solar panels on Berlin rooftops. 'Germany must work hard to maintain our lead on energy transition.'
Photograph: Rolf Schulten/Bloomberg/Getty Images

At the UN climate conference in Paris in December 2015, [195 countries](#) concluded a [groundbreaking climate accord](#). They agreed to limit global warming to well below 2C to avoid extremely dangerous and irreversible climate change.

The international community's remaining emission "budget" is less than 1,000 gigatonnes of CO₂. The Paris agreement is intended to ensure as quickly as possible that the annual global emissions go down, the budget is stretched, and the net emissions of greenhouse gases are reduced to zero over a few decades.

<http://www.theguardian.com/environment/2016/mar/23/industrialised-nations-must-lead-an-exit-strategy-for-fossil-fuels>



Woodside's Browse project setback shows the gas industry needs to get its act together

March 24, 2016 4:46pm AEDT

Could better regulations have persuaded Woodside not to mothball its Browse gas project? AAP Image/Richard Wainwright

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Energy giant Woodside's decision to [shelve its Browse natural gas project off Australia's northwest coast](#) is no doubt a disappointment for many people in Western Australia, but is by no means a disaster for the state's economy.

Nor is it an indication that the future of the Northwest Shelf's gas reserves is in jeopardy. Long-term world demand for natural gas is robust, given its anticipated role in the low-carbon transition where it is expected to displace coal in power generation.

Author



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<http://theconversation.com/woodsides-browse-project-setback-shows-the-gas-industry-needs-to-get-its-act-together-56748>

Open science: the future of research?

If we want to eradicate diseases in the developing world, increase innovation in the pharmaceutical industry and speed up the discovery of new medicines we need to share research, writes Alice Williamson.

Malaria is a devastating disease. In 2013 it affected an estimated 198 million people, killing over half a million, most of them children under the age of five.

The World Health Organisation reported a 30 per cent reduction in malaria between 2000 and 2013 due to 'an expansion of malaria interventions'. This is great news, but emerging parasite resistance has been detected in five countries, so new medicines are urgently required.

Traditional approaches to drug discovery and development are labour intensive, hugely expensive, time consuming and inefficient. Much, if not all of the process is veiled in secrecy. This means that sometimes chemists from different companies might be synthesising the same molecules, which is bad enough when the drugs do work, but ridiculously wasteful when they are found to be inactive.



'Traditional approaches to drug discovery and development are labour intensive, hugely expensive, time consuming and inefficient' (Source: luckyraccoon/iStockphoto)

<http://www.abc.net.au/science/articles/2015/06/29/4254093.htm>

How many forms can an ape take?

New research on the form of ape and human hands is helping to rewrite understanding of the many and varied ways evolution constructs life, writes Darren Curnoe.

The study of form has been central to biology ever since people have contemplated how life came to exist and how individual species or groups of them are related to one another.

When biologists speak of 'form' they mean the shape, appearance or structure an organism takes — be it whole organism or only a constituent part such as a bodily system, organ, microscopic structure or even a molecule.

A famous example from the 20th century is the form of the DNA molecule, which we have known to be a double helix since Watson and Crick published their model in 1953.

Palaeontologists like me are especially interested in form because it gives us clues about the diversity of past life and deep insights into the history and mechanisms of evolution.



Research on primate hands challenges a long-held assumption that living chimpanzees are a lot like our earliest human ancestors (Source: Fotoamatori/Stockphoto)

<http://www.abc.net.au/science/articles/2015/08/10/4289372.htm>

Has the NFU president's farm led by example when it comes to bad practice in the countryside?

George Monbiot



The farm jointly owned by Meurig Raymond has twice been the site of incidents which have led to successful prosecutions



📷 'Is it not time that the NFU sought to dispel the impression that its core mission is to champion bad practice in the countryside?' asks George Monbiot. Photograph: Joe Blossom/Alamy

“It’s simple,” a civil servant at the government’s environment department, Defra, once told me. “When we want to know what our position should be, we ask the NFU [National Farmers’ Union].”

<http://www.theguardian.com/environment/georgemonbiot/2016/mar/23/has-the-nfu-presidents-farm-led-by-example-when-it-comes-to-bad-practice-in-the-countryside>

New clear thinking on risky business

The future will always be a risky business. Take nuclear energy; how do we manage the risks of tomorrow in our planning today? asks Paul Willis.

Risk is perhaps the most difficult concept to communicate because what you make of it depends heavily on your perspective.

In science, risk can be calculated as a statistic, a probability of an event occurring. Whereas, to an individual, risk is something personal — it's the possibility of an event effecting them no matter how remote the probability of that event actually taking place.

Science calculates the risk of dying in a plane crash to be vanishingly small where as an individual wonders what it would be like for it to happen to them. For science risk is objective, for individuals it's visceral.

And, as we shall see, perception of risk can depend heavily on the issues at stake. Why do we look at the risk from nuclear power generation in a different light to far riskier activities such as driving a car or flying in an aeroplane?



Weighing the benefit of clean energy against the risk of another nuclear disaster has pushed the thinking of many scientists previously opposed to nuclear power into the pro-nuclear camp (Source: MartinLister/iStockphoto)

<http://www.abc.net.au/science/articles/2015/08/05/4286640.htm>

Mounting opposition to Bali mass tourism project

Johnny Langenheim

Tensions are running high in Bali, with a decision due any day on a controversial land reclamation project



📷 A protest in the Bali capital Denpasar. Initially driven by young people, the anti-reclamation movement has now gone mainstream, with 28 village officially opposing the Benoa Bay tourism development project. Photograph: Putu Sayoga

The battle over a controversial land reclamation project in [Bali](#) is reaching crisis point, with an official decision due any day on an Environmental Impact Assessment (EIA) that would pave the way for the project to break ground.

<http://www.theguardian.com/environment/the-coral-triangle/2016/mar/22/mounting-opposition-to-bali-mass-tourism-project>

Top five science books of 2015

OPINION

ABC Science

Posted 16 Dec 2015, 11:41am

Need a good book to tide you over the holiday season? Bibliophile [Dr George Aranda](#) nominates his top five science reads published in the past year.

Each year I explore the world of popular science books looking for what's new, what's sexy and what's downright weird for my blog, Science Book a Day.

In 2015, physics and mathematics were represented by John Gribbin's Einstein's Masterwork: 1915 and the General Theory of Relativity; Lisa Randall's Dark Matter and the Dinosaurs: The Astounding Interconnectedness of the Universe; and Eugenia Cheng's How to Bake Pi: An Edible Exploration of the Mathematics of Mathematics.



PHOTO: [Need a good book? Here are five top science reads for the holidays](#) (Getty Images)

RELATED STORY: [Winton Prize for Science Books: Who will win?](#)

<http://www.abc.net.au/news/2015-12-16/five-top-science-books-of-2015/7030204>

Record global temperatures are shocking – and yet we don't respond seriously

We treat climate change records as we treat new fashions, phones or films. But we seem unable to understand that we are driving such changes



📷 A man takes a nap as New York experiences record temperatures in March. 'We appear uninterested in the environmental changes happening right in front of our eyes,' says James Dyke. Photograph: ddp USA/REX/Shutterstock

And another one bites the dust. The year 2014 was the warmest ever recorded by humans. Then 2015 was warmer still. January 2016 broke the record for the largest monthly temperature anomaly. Then came last month.

<http://www.theguardian.com/environment/2016/mar/15/record-global-temperatures-are-shocking-and-yet-we-dont-respond-seriously>

A fossil fuels-arts world divorce is 'the way the world is moving'

While BP say the decision to ends its Tate sponsorship is unrelated to climate protests, museum industry insiders say campaigners are having an effect as they turn the spotlight on the ethics of corporate funding



📷 Activists campaign against BP's sponsorship of London's National Portrait Gallery's portrait award. Photograph: Akira Suemori/AP

BP's decision to [pull the plug on their sponsorship of the Tate](#) is a milestone in the campaign to make fossil fuels a toxic brand, and not the first.

<http://www.theguardian.com/environment/2016/mar/11/fossil-fuels-arts-world-divorce-is-way-the-world-is-moving-tate-bp>



“

The people who grow food
are too poor to buy it.

”

Simran Sethi
Author

#FoodTank · foodtanksummit.com