

Indonesia wants to restore its degraded peatlands. But first it needs to know how to map them. EPA/Bagus Indahono

Email		Last year, fires burned 2 million hectares of peatlands in Indonesia, creating an
y Twitter	48	that affected several neighbouring Southeast Asian countries.
f Facebook	82	As nations met in Paris late last year to agree a <u>deal to limit global greenhouse g</u>
In LinkedIn	33	

sions, the huge carbon pool stored in the peatlands was going up in smoke at an

HTTPS://THECONVERSATION.COM/INDONESIA-OFFERS-A-COOL-MILLION-TO-WHOEVER-CAN-HELP-TAKE-THE-HEAT-OFF-ITS-PEATLANDS-56294

dented rate.

Print

OPINION: UNLOCKING THE AGRICULTURAL POTENTIAL OF NORTHERN AUSTRALIA

ABC Rural

Peter Stone, Gary Fitt and Michael Robertson Posted 12 Apr 2016, 9:59am



The Food Futures Conference is on in Darwin this week, focussing on what it will take to develop agricultural projects in northern Australia.

CSIRO researchers Peter Stone, Gary Fitt and Michael Robertson have done a lot of work in this space. http://www.abc.net.au/news/2016-04-12/csiro-views-on-developing-agriculture-in-northern-australia/7317100

NEW RESEARCH FINDS CLIMATE SOLUTIONS IN THE SOIL

19 April 2016



Soil scientist at work. Photo credit: NC State.

This is a guest post from Daniel Kane, a soil scientist and agroecologist who researches soil carbon cycles, regenerative agriculture, and sustainable food systems. Last year, the National Sustainable Agriculture Coalition (NSAC) and Breakthrough Strategies and Solutions, LLC, jointly published a paper ("Carbon Sequestration Potential on Agricultural Lands: A Review of Current Science and Available Practices") that Daniel authored, exploring how soil carbon is sequestered, the state of soil carbon research, and the debate on its potential. In this post Daniel provides an overview of recent findings on the potential for agricultural management practices to mitigate climate change. Our follow up piece tomorrow will highlight policy opportunities related to climate change and agriculture.

http://sustainableagriculture.net/blog/soil-climate-solutions/

OPINION: TO SOLVE HUNGER, START WITH SOIL

By Anne-Marie Steyn Reprint | Print | Send by email

Anne-Marie Steyn is Series Producer of Shamba Shape-Up and a spokesperson for Farming First. The Farming First coalition is currently in New York advocating for agriculture's central role in meeting the Sustainable Development Goals.



Experts give advice on potato-planting for greater yields in an episode of Shamba Shape Up.

NAIROBI, Apr 24 2015 (IPS) - Peter looked confused as he recounted how he'd painstakingly planted potatoes to sell and to feed his family of eight, only to find that when harvest time rolled around he had been greeted with tiny tubers not much bigger than golf balls. http://www.ipsnews.net/2015/04/opinion-to-solve-hunger-start-with-soil/

SOIL HEALTH EMERGES AS GLOBAL PRIORITY TO ADDRESS CLIMATE CHANGE



Healthy soil. Photo credit: USDA

Agricultural production accounts for nearly ten percent of all greenhouse gas emissions, and farmers and ranchers are among those who will most immediately and dramatically suffer the consequences of climate change. Agriculture has a substantial role to play in global mitigation efforts, and we at the National Sustainable Agriculture Coalition (NSAC) work closely with the U.S. Department of Agriculture (USDA) to identify opportunities to support climate change mitigation efforts, including key ways the Administration can address climate change and agriculture in its final year. We are pleased to see that this important issue is now also being seriously debated on the global stage. http://sustainableagriculture.net/blog/4per1000/

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

'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

Marian MacDonald

Marian McDonald is a dairy farmer and conservationist in South Gippsland

Tuesday 9 February 2016 10.34

"... in the last decade we've definitively answered the question that the world's climate is changing. What keeps me up and 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/comment is free/2016/feb/09/climate-change-has-not-been-answered-for-farmers-we-need-more-information-not-less

GIVE FARM LIFE, PROPERLY MANAGE SOIL



(Photo: PDN file)

Every year in February, the University of Guam has its annual faculty development day that we, the faculty, attend. Only this time the faculties were introduced to new and/or different approaches to teaching.

One of the main lessons this year was the use of storytelling. Its purpose was to take lesson material, normally taught in a rigid and bullet-formatted PowerPoint that are quickly forgotten, and present the lesson in such a way

that is interesting and memorable. It is believed that students learn and remember a subject better when they hear it first as a story. The following is an example of a story that I tell to my students of soil fertility and management.

http://www.guampdn.com/story/opinion/2016/04/14/mohammad-golabi/83017262/

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.

He replied "of course you can't trust science", and proceeded to reel off previously known 'facts' (the world is flat/the world is the centre of the Universe) that we now know not to be true. http://www.abc.net.au/science/articles/2015/07/28/4270728.htm

New York state to ban fracking over 'red flags' to public health

Decision comes after two-year study spearheaded by health commissioner into the effects of fracking on the state's air and water raises 'serious questions'



Anti-fracking protesters gather outside the auditorium before New York governor Andrew Cuomo gives his fourth state of the state address on 8 January 2014 in Albany, New York. Photograph: Spencer Platt/Getty Images

The state of New York said it would ban the controversial practice of hydraulic fracturing on Wednesday because of "red flags" about its risks to public health.

The ban puts one of the last great areas of untapped potential in the Marcellus Shale off-limits to the oil and gas industry.

http://www.theguardian.com/environment/2014/dec/17/new-york-state-fracking-bantwo-years-public-health

PEAK WATER, PEAK OIL...NOW, PEAK SOIL?

By Stephen Leahy Reprint | Print | Send by email



Healthy soil looks dark, crumbly, and porous, and is home to worms and other organisms. It feels soft, moist, and friable, and allows plant roots to grow unimpeded. Credit: Colette Kessler, USDA Natural Resources Conservation Service

REYKJAVÍK, Iceland, May 31 2013 (IPS) - Soil is becoming endangered. This reality needs to be part of our collective awareness in order to feed nine billion people by 2050, say experts meeting here in Reykjavík.

And a big part of reversing soil decline is carbon, the same element that is overheating the planet.

"Keeping and putting carbon in its rightful place" needs to be the mantra for humanity if we want to continue to eat, drink and combat global warming, concluded 200 researchers from more than 30 countries http://www.ipsnews.net/2013/05/peak-water-peak-oilnow-peak-soil/

ARE THE SUSTAINABLE DEVELOPMENT GOALS SUSTAINABLE?

2015 is going to be a pivotal year for sustainable development: a global climate agreement is due to be negotiated in Paris in December; under Germany's presidency, the G7 Summit in June will address sustainable economic growth; and the 193 UN Member States will gather in New York in September to agree on a set of

Sustainable Development Goals (SDGs), thereby setting the course for the global Post-2015 Agenda. Negotiations are currently under way on 17 SDGsand 169 targets to replace the Millennium Development Goals. These goals are intended to apply to all countries and encompass three dimensions of sustainability: the ecology, the economy and the social dimension. They will also include a

mechanism for monitoring, review and accountability the SDGs.

Dr Ira Matuschke has been coordinating the Renewable Resources and Sustainable Development Goals Forum at the IASS since 2014.

Before that, she worked as an agricultural economist in various capacities for the OECD in Paris and the FAO in Rome. She is particularly interested in the task of shaping sustainable agriculture in developing countries. http://globalsoilweek.org/areas-of-work/sustainable-development-goals/are-the-sustainable-development-goals-sustainable

For seven years, fracking roiled New York. Back in the summer of 2007, when the gas industry started knocking on doors in Delaware County, a faultline ran right through the home of Mark Dunau and Lisa Wujnovich.



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➡ Print

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

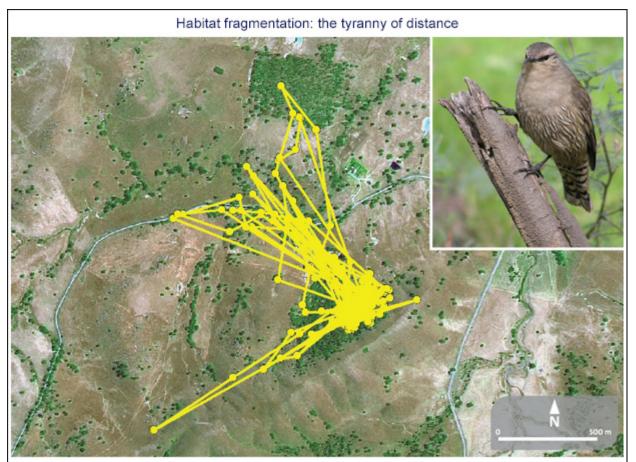
GOOD PLANNING MAINTAINS BIODIVERSITY ON FARMS

Farming and native biodiversity are not mutually exclusive. Landscape planning is one approach that lets the two land uses coexist, explains Sue McIntyre.



When intensive land use covers more than one-third of the landscape the arrangement of the remaining habitat becomes critical for connectivity (Source: Damien Porombka, Huaifeng Zhang/ABC TV)

The 20th century saw a wealth of innovations in agriculture that allowed increased food and fibre production, and with it prosperity. But our society is now realising that the fertilisers, pesticides, machinery and non-native pastures that brought these benefits have produced a corresponding problem for native biodiversity. And that raises the question: What are we going to do about minimising environmental harm? Indeed, what circumstances allow the twin objectives of productivity for human uses and nature conservation to be met?



Tracked movements (yellow) of a female brown treecreeper (inset) attempting to disperse and breed. The dense cluster of points indicates where she was born. The mapped path shows the use of roadside and streamside corridors and scattered trees. The treecreeper reached another patch of vegetation to the north, but there were no treecreepers there so she ultimately returned home, and dispersal failed. Credit: Erik Doerr, Veronica Doerr, and Micah Davies

http://www.abc.net.au/science/articles/2014/11/19/4116256.htm



Alpine meadows are a pretty rare sight in Australia. Colin Totterdell, Author provided

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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.

Think of an Australian landscape and you're unlikely to picture snow-capped mountains or alpine meadows. But that's what you'll find atop the peaks of the country's southeastern corner.

Although relatively small – covering about 11,000 square kilometres or 0.15% of the continent – these alpine and subalpine ecosystems have outstanding natural value and provide billions of dollars' worth of benefits to the nation each year.

They are in comparatively good health but are facing numerous threats. However, their health in decades and



The distribution of alpine and subalpine landscapes in Australia. Author provided

http://theconversation.com/ecocheck-australias-alps-are-cool-but-the-heat-is-on-56997

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/Slphiwe Slbeko

African soils have been mined for their nutrients for far too long. Nutrients are removed in

http://the conversation.com/what-can-be-done-about-badly-depleted-nitrogen-level sin-africas-soil-54611

POLICY SOLUTIONS FOR HEALTHY SOILS

20 April 2016

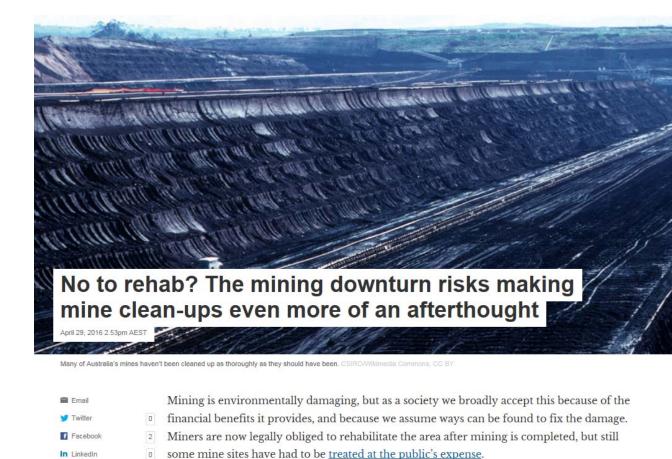


Farmer showing off healthy soil from cover-cropped acres. Photo credit: USDA

This is the second blog in a two-part series on the integral role of agriculture and soil health in mitigating greenhouse gas emissions. See yesterday's guest post from Daniel Kane on the recently published findings on the important role that soils play in combatting climate change.

Years of increasing greenhouse gas (GHG) emissions have meant more farmers and ranchers are facing devastating impacts from climate change than ever – from severe floods and extreme drought, to increased pressures from changing disease and pest patterns. Given that land use (including agricultural management and land cover change) accounts for nearly a quarter of human GHG emissions, including carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O), farmers have an important role to play in mitigating the effects of climate change.

http://sustainableagriculture.net/blog/policy-soil-science/



http://theconversation.com/no-to-rehab-the-mining-downturn-risks-making-mine-clean-ups-even-more-of-an-afterthought-58502

HUMAN ENVIRONMENTAL FOOTPRINT REACHES FAR BACK IN TIME

While humankind has been altering the planet for hundreds of thousands of years, our burgeoning population means our impact has never been greater than it is today, writes Darren Curnoe.



Humans were responsible for changing the environment well before the Industrial Revolution began (iStockphoto: rkupbens)

You'd literally have to be a cave dweller to be oblivious to the major global environmental changes happening in the world today.

It reads like a litany of crimes against the planet:

- The many and far reaching impacts of global warming
- Disruption of the planet's chemical cycles, such as carbon, nitrogen, phosphorous and others
- Air pollution from combustive sources
- Light pollution from our 24-hour cities
- Clearing and cultivation of the land and the ensuing loss of biodiversity
- Erosion and siltation of waterways
- Overfishing of the seas and oceans
- Introduction of exotic species and their disruption of ecosystems
- Plastic pollution and acidification of the oceans
- Synthetic chemical and pharmaceutical pollutions of land and water, such as antibiotics.

http://www.abc.net.au/science/articles/2015/03/23/4201575.htm

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



Data about farms' financial situation as well as the weather could help identify those most vulnerable to drought. Bid



The Millennium Drought taught Australians many lessons about living under extremely dry conditions - not just about how to conserve water, but also about human suffering.

In a drought, farmers find it more difficult to make an income, leading to mental health problems and raising the rate of male suicides. In the city, the impact is felt through water restrictions and more expensive infrastructure.

With very dry conditions returning to Tasmania, central Queensland and western Victoria, are we better prepared for the next big drought?

This is an issue not just for Australia, but across the world, from California, to England, to the Levant region in the eastern Mediterranean, which from 1998-2012 experienced its worst drought in 900 years.

Drought is a common threat, but there is a problem with how this threat is measured. Traditionally, droughts are judged by rainfall (or how long it has been absent), water storage levels and soil moisture.

But none of these physical measures actually describes the impacts on people and society. A dry period may not feel like a drought at all if there are no impacts on the environment, economy or people. Conversely, droughts that are relatively modest in physical terms can be devastating if they strike where people are already vulnerable.

If we can make our forecasting smarter, our efforts can be targeted to places where the

http://theconversation.com/drought-forecasting-isnt-just-about-water-to-get-smart-weneed-health-and-financial-data-too-57068

THE SOIL, SILENT ALLY AGAINST **HUNGER IN LATIN AMERICA**





The fertility of tropical soil can be appreciated at this market stall in the Amazon city of Belem do Pará in northern Brazil. Credit: Marianela Jarroud/IPS

SANTIAGO - Latin America and the Caribbean should use sustainable production techniques to ensure healthy soil, the basic element in agriculture, food production and the fight against hunger.

"Keeping the soil healthy makes food production possible," said Raúl Benítez, regional director for the United Nations Food and Agriculture Organisation (FAO). "Without good soil, food production is undermined, and becomes more difficult and costly." http://www.ipsnews.net/2014/12/the-soil-silent-ally-against-hunger-in-latin-america/



Sir David on the Great Barrier Reef.



Over three weeks, Australians have been taken on an incredible journey through the biology, beauty and wonder of the Great Barrier Reef, guided by Sir David Attenborough.

As individuals who have had the privilege of working on the Reef for much of our lives, the wonderful storytelling, exquisite photography and stunning production of the Great Barrier Reef with David Attenborough has been inspiring. It's a great reminder of how lucky we are to have this wonder of nature right on our doorstep.

Particularly special has been the wonderful black-and-white footage of Sir David's first visit

http://theconversation.com/david-attenborough-says-the-great-barrier-reef-is-in-grave-danger-its-time-tostep-up-58204

WHAT HAS PALAEONTOLOGY EVER **DONE FOR US?**

Palaeontologists do more than scare little kids with terrifying creatures - they are the scientific historians of life, writes Paul Willis.

By Paul Willis



Think this is frightening? The true place in the popular psyche of palaeontologists is to tell far more frightening and relevant stories about our own future (iStockphoto: Harryfn)

Surely of all the useful, applicable sciences, palaeontology must rank at the bottom? It's a great subject to fascinate and scare little kids but is there really any practical application for the work of those of us who study the remains of long-dead creatures?

Well yes; yes there is. In fact, yes there are. So let's take a moment to reflect on some of the things that palaeontology has done for us.

http://www.abc.net.au/science/articles/2015/04/13/4214015.htm



Email Twitter

Labor has announced the climate policy it will take to the federal election, including a return to carbon pricing under an emissions trading scheme.

The detailed policy includes multiple market-based mechanisms. Among these are an emissions trading scheme, a domestic electricity cap-and-trade scheme, and a mechanism to close brown coal power stations. The package would also increase investment in renewable energy, instigate a major review of the electricity sector, tighten vehicle emissions standards

and create a "trigger" to account for climate change in land-clearing.

Climate policy is the football of Australian politics. So as the election campaign ramps up, grab your popcorn and settle in for the showdown.

http://theconversation.com/labors-climate-policy-back-in-the-game-but-missingdetail-58477

LAND MANAGEMENT MATTERS: MALAWIAN COMMUNITIES CREATE MAPS TO FIND ANSWERS

2015 by Juliet Braslow

In Malawi, worry creases farmers' faces as they explain that their maize crop may fail this year. Planting was done on time, but in January intense rainfall and flooding swept away much of the fields, soil and seeds alike. Our AGORA* team witnessed the force of these rains during a participatory mapping exercise in Ntcheu District. As we drove away from one village, a downpour began and within minutes, rivers of red silty water flowed between the ridges of maize, carrying away the precious fertile topsoil, swelling rivers, creating gullies, washing away seeds and paths.



Lynette Molyneaux 🕥 Researcher, Energy Ec Group, Global Change



John Foster



Deputy Director, Glob University of Queensland



A flooded maize field in Ntcheu, Malawi. Photo: J. Braslow/CIAT



Erosion impact after January 2015 flooding in Ntcheu, Malawi. Photo: J. Braslow/CIAT

http://ciatblogs.cgiar.org/soils/land-management-matters-malawian-communities-create-maps-to-find-answers/



Dried lake beds, failed crops, flattened trees: when we think of global warming we often think of the impacts of droughts and extreme weather. While there is truth in this image, a rather different picture is emerging.

In LinkedIn

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Dried lake beds, failed crops, flattened trees: when we think of global warming we often think of the impacts of droughts and extreme weather. While there is truth in this image, a rather different picture is emerging.

In a paper published in Nature Climate Change, we show that the Earth has been getting

greener over the past 30 years. As much as half of all vegetated land is greener today, and remarkably, only 4% of land has become browner.

~ 1. ... 1. 1. 1. ... 20. 2.1.....

http://theconversation.com/rising-carbon-dioxide-is-greening-the-earth-but-its-not-all-good-news-58282

AGRICULTURAL POLICY TO STEM MIGRATION: A LOOK AT SYRIA AND THE SAHEL



April 12, 2016 By: Karlijn Muiderman, Annemarie van de VijselImage: OxfamNovib

Expert opinion

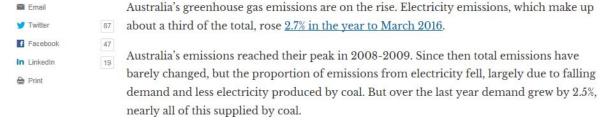
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Can the EU stem migration flows to Europe by supporting agriculture in countries of origin? In some situations, it can. The impact could be particularly large if Europe worked to increase the resilience of the food system and the people in countries with self-sustaining farming, thereby reducing reasons to migrate. Yet in countries that rely on market-oriented farming, the context is too complex to find a simple solution.

http://knowledge4food.net/agricultural-policy-stem-migration-look-syria-sahel/



An LNG tanker leaves Gladstone, Queensland. Gas development is one of the drivers behind Australia's increasing emissions and electricity demand. AAP/Dan Peled



http://the conversation.com/australias-carbon-emissions-and-electricity-demand-are-growing-heres-why-57649

WHAT DOES REGRESSION TO THE MEAN, MEAN?

Employers, lovers, researchers and investors have all been fooled by this statistical concept, but it's actually a doddle, explains Gary Smith.

By Gary Smith



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

That's not love, it's regression to the mean. (Source: AntonioGuillem/iStockphoto)

We encounter regression to the mean almost every day, but almost nobody understands it.

From sporting prowess to investment success, and jobseeking to KPIs, it crops up pretty much whenever we see an imperfect measure of what we are trying to measure.

Like using the results of a single test as a measure of your ability in that field. http://www.abc.net.au/science/articles/2015/05/12/4217146.htm

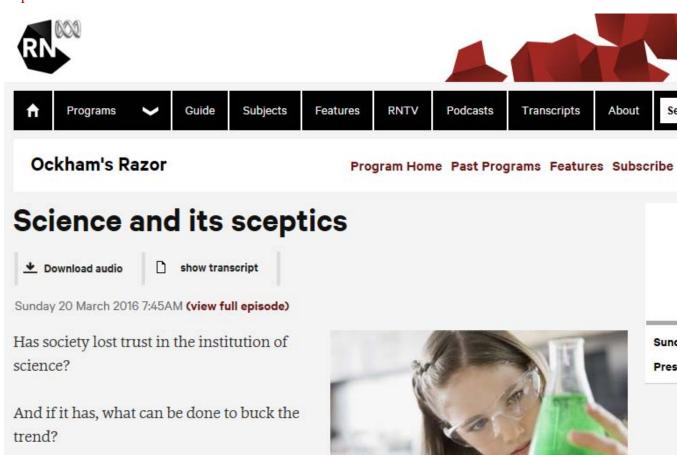


IMAGE: QUESTIONING SCIENCE (GETTY IMAGES/HERO IMAGES)

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

FROM MASS CORAL BLEACHING, A SCIENTIST LOOKS FOR LESSONS

For climate scientist Kim Cobb, this year's massive bleaching of coral reefs is providing sobering insights into the impacts of global warming. Yale Environment 360 talked with Cobb about the bleaching events and the push to make reefs more resilient to rising temperatures.

BY KATHERINE BAGLEY

Twice a year, climate scientist Kim Cobb travels to Christmas Island in the middle of the Pacific Ocean to collect core samples from coral reefs. The data help in reconstructing past climate records and improving predictions of future global warming. But when Cobb, a research scientist and professor at the Georgia Institute of Technology, arrived on the island earlier this month, she was stunned. The corals she had spent the past 18 years studying were largely dead or dying.

The scene has become a familiar one across the Pacific and Indian oceans this year as a record-breaking El Niño drove water temperatures high above normal and caused fragile coral reef systems to bleach from stress or die.



Kim Cobb

A reported 93 percent of the Great Barrier Reef has experienced bleaching, according to an extensive aerial survey by a team of Australian scientists. Researchers across the region are reporting similar catastrophes from Hawaii to India.

In an interview with *Yale Environment 360*, Cobb talked about the recent bleaching event, the race to make reefs more resilient to rising global temperatures, and how coral records could change the way scientists project short-term climate impacts for the coming decades.

 $http://e360.yale.edu/feature/from_mass_coral_bleaching_scientist_looks_for_lessons_kim_cobb_el_nino/2987/$

"We are often not aware that it can take 1,000 years to generate one centimetre of healthy soil, but we can lose that centimetre in a few seconds as a result of pollution, toxic waste, or misuse of the soil." -- Raúl Benítez