

28 January 2015, 9:48pm AEDT

Deep but not dead: how tropical subsoil microbes could affect the carbon cycle

AUTHOR



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DISCLOSURE STATEMENT

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Lush rainforest above ground... spare a thought for what's happening in the soil. Tim Moore, CC BY-NC-ND

It's no exaggeration to say the tropics drive our planet's carbon cycle – the constant transfer of carbon back and forth, on a global scale, between living things and the environment. Understanding the dynamics of the carbon cycle is increasingly important because more carbon in the atmosphere increases the warming greenhouse effect.

<https://theconversation.com/deep-but-not-dead-how-tropical-subsoil-microbes-could-affect-the-carbon-cycle-35295>

Opinion: Soils are a crucial - and undervalued - ingredient of healthy agriculture



SYLVAIN CHARLEBOIS, SPECIAL TO MONTREAL GAZETTE

[More from Sylvain Charlebois, Special to Montreal Gazette](#)

Published on: January 13, 2015 | Last Updated: January 13, 2015 2:07 PM EST



Each year, the Food and Agriculture Organization of the United Nations makes it a point to celebrate one aspect of agriculture. Last year was the year of the family farm, which was a sound decision. In developing countries, the acknowledgement of the importance of family enterprises in agriculture was welcome news, as ensuring food security in many parts of the world depends largely on family-owned operations. This year, a more undervalued ingredient of healthy agriculture will be showcased by the FAO: soils.

<http://montrealgazette.com/news/world/opinion-soils-are-a-crucial-and-undervalued-ingredient-of-healthy-agriculture>



Australian science and the American dream

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Sunday 4 January 2015 7:45AM

Professor Peter Ward from Adelaide University is an American scientist who settled in Australia. He talks about the difference of funding scientific research in the US and in Australia. According to him science keeps the American universities afloat. When he came to Australia he found that things were very different at Australian universities.



IMAGE: FUNDING SCIENTIFIC RESEARCH AT AMERICAN UNIVERSITIES IS VERY DIFFERENT TO THE WAY IT'S DONE IN AUSTRALIA. (GETTY/PAMELA MOORE)



Sundays 7:45am
Presented by Robyn Williams

<http://www.abc.net.au/radionational/programs/ockhamsrazor/australian-science-and-the-american-dream/5946618>

Michael Jeffery and Helen Szoke on a military plan to improve Australia's soils

AUTHOR



Nicola Roxon
Adjunct Professor and Chair, Sir Zelman Cowen
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University

DISCLOSURE STATEMENT

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Major General Michael Jeffery, Chairman of Soils for Life. AAP image/Alan Point

A speech given by Major General Michael Jeffery at Victoria University College of Law and Justice on October 15 was the **second of a series of four** tapping into the vast experience of eminent Australians who have served as Governor-General of Australia.

<https://theconversation.com/michael-jeffery-and-helen-szoke-on-a-military-plan-to-improve-australias-soils-33084>

Climate change isn't just a Leftist cause

OPINION

By [Dale Hughes](#)

Updated 9 Jan 2015, 12:14pm Fri 9 Jan 2015, 12:14pm



[Photo: The Liberal Party should look to its core values, or risk sitting on the wrong side of history. \(AAP: Dan Peled\)](#)

The climate debate has descended into an ideological battle of Left versus Right, with parties of the Left taking ownership of the moral necessity for climate action. It need not be so, writes Dale Hughes.

I'm a Liberal voter and I'm passionate about action on climate change. Did that sentence seem strange?

Under Tony Abbott's stewardship of the federal Liberal Party, the term "Liberal" has almost become synonymous with climate change denial. It need not be so.

Dale Hughes is a freelance writer and a member of the Victorian Liberal Party.

<http://www.abc.net.au/news/2015-01-07/hughes-climate-change-isnt-just-a-leftist-cause/6003620>

Climatic volatility an urgent concern

Posted By: **Gregor Heard** on 31/12/2014 4:00:00 AM | Comments (23)



A system which allows farmers to better manage climatic volatility would create even more value

AFTER a woeful couple of years, it has been a lovely festive period for drought-stricken farmers in Queensland, with many centres in the Maranoa and Warrego regions receiving their best falls in two years.

Should this promising start translate into a meaningful turnaround in the rural economy in northern Australia - and farmers return to a more even keel - it would also signal the perfect time for meaningful debate on government drought reform in this nation.

<http://www.stockandland.com.au/blogs/a-matter-of-opinion/climatic-volatility-an-urgent-concern/2720292.aspx>

Your favourite environment stories of 2014

BY SARA PHILLIPS

ABC Environment | 31 DEC 2014

 **Comment**

As the year sighs to a close, I take a look back at which environment stories fired your passions and your neurons this year.

HEATWAVES REALLY HIT us hard in 2014. If you cast your mind back to last summer, you'll remember the swelter that just wouldn't end. Consequently, two of the most popular stories of the year related to heat.

How you pay for your neighbour's air-con

This blog explained the flaws of the Australian electricity market, which has been under review for quite some years. Air-conditioning, bizarrely, is an exemplar of how and what is wrong with electricity prices.



Two stories about heatwaves were amongst the most popular in 2014.

SEE ALSO



<http://www.abc.net.au/environment/articles/2014/12/31/4156239.htm>

Biosecurity boundary blues

Posted By: **Jeanette Severs** on 22/01/2015 4:00:00 AM | Comments (0)



Isn't it time we put aside boundaries and assumed a national agreement on biosecurity?

IT IS time for a frank discussion about biosecurity.

The research into this week's *Stock & Land* stories about National Vendor Declaration (NVD) forms has revealed the plethora of variations across the nation in the number of forms to be used and whether they are compulsory or voluntary in any specific State, Territory or district.

From discussion with many people involved in this issue, the same question arises: Isn't it time we put aside State, Territory and district boundaries and assumed a national agreement on biosecurity? <http://www.stockandland.com.au/blogs/a-matter-of-opinion/biosecurity-boundary-blues/2721682.aspx>

Soil microbes more sensitive to climate change than thought



Tests were conducted on a range of vegetation, including from broadleaf forests.

Soils may be less of a carbon sink than previously thought, with new research indicating that the earth is likely to release more carbon as the planet heats up.

The role of soil in the carbon cycle is crucial because the near-surface earth contains as much as 2000 billion tonnes of carbon – or roughly four times as much as the plants sprouting from it. By comparison, the atmosphere contains about 800 billion tonnes of carbon dioxide <http://www.smh.com.au/environment/climate-change/soil-microbes-more-sensitive-to-climate-change-than-thought-20140903-10bug2.html>

Global temperatures are batting above their average

OPINION

By Greg Jericho

Updated 21 Jan 2015, 2:14pm

There's now no doubt global temperatures are heating up. If the planet was a cricketer, their soaring average would be beyond dispute in the commentary box, or newspaper column or around the barbecue over the holidays, writes Greg Jericho.

With 2014 being recorded as the hottest year on record by the NASA [Goddard Institute for Space Science](#), the [UK MET Office](#), the [Japanese Meteorological Agency](#) and the [National Oceanic and Atmospheric Administration \(NOAA\)](#) the evidence that the planet continues to heat is now beyond overwhelming.



PHOTO: The evidence that the planet continues to heat is now beyond overwhelming. (Reuters)

Greg Jericho writes weekly for The Drum. His blog can be found here. Greg has also written for The Drum under Grog's Gamut you can find those articles here. He tweets at [@grogsgamut](https://twitter.com/grogsgamut).

<http://www.abc.net.au/news/2015-01-21/jericho-global-temperatures-are-batting-above-their-average/6029926>

The mayor of Seattle congratulates the ANU on divesting from fossil fuels

BY MIKE MCGINN

ABC Environment | 18 DEC 2014

Comments (15)

The mayor of the first city in the world to divest from fossil fuels has applauded the Australian National University for showing the same foresight.

SOMETIMES THE BEST measure of a movement's momentum is the reaction of its critics. When, in early October, the Australian National University announced that it would sell its shares in seven fossil-fuel and mining companies, it triggered a chorus of criticism from conservative politicians.



The advertisement supporting the ANU's decision was backed by prominent leaders and business people.

<http://www.abc.net.au/environment/articles/2014/12/18/4150560.htm>

Rethink drought preparedness approach

Posted By: **Andrew Norris** on 2/12/2014 5:00:00 AM | Comments (0)

THE impact of this drought is shaping up as long term and has highlighted shortcomings in research and development that could otherwise have helped farmers adapt.

The usual factors which allow farmers to rebound when it rains are diminishing – such as cash flow for the next crop or restocking – and the Rural Debt Roundtable says the banks' rural portfolios can't possibly be in as good a shape as they would like us to believe.

<http://www.stockandland.com.au/blogs/a-matter-of-opinion/rethink-drought-preparedness-approach/2718666.aspx>

Dumb and dumber: the raw facts

Posted By: **David Leyonhjelm** on 12/01/2015 3:30:00 AM | Comments (44)



The choices we make as adults are none of the government's business .

IT SEEMS astonishing that people choose to reject the very science that can save their lives, especially when it is to such tragic effect as the recent death of a toddler from consuming unpasteurised cow's milk.

This must surely qualify as a classic illustration of evolution in action, as - without wishing to sound callous - the tragedy has clearly had an adverse effect on the reproductive effects of the poor child's parents <http://www.stockjournal.com.au/blogs/agribuzz-with-david-leyonhjelm/dumb-and-dumber-the-raw-facts/2720808.aspx>



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Frankenstein and the magic of science

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Sunday 11 January 2015 7:45AM

Suzanne Burdon is the author of a biographical novel about Mary Shelley, the author of 'Frankenstein'. Mary Shelley wrote 'Frankenstein' when she was eighteen years old, in 1816. She never spoke of Victor Frankenstein as a scientist, because the term itself didn't exist until nearly two decades later. Frankenstein epitomised the changes in attitudes towards science of the society at the time.

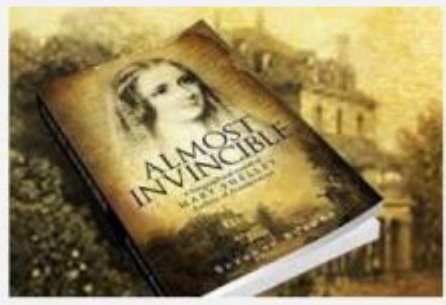


IMAGE: ALMOST INVINCIBLE IS A BIOGRAPHICAL NOVEL OF MARY SHELLEY



Sundays 7:45am

Presented by Robyn Williams

50 3 0

<http://www.abc.net.au/radionational/programs/ockhamsrazor/frankenstein-and-the-magic-of-science/5947048>

28 January 2015, 6:25am AEDT

A crash in gas use is more likely than the forecast 'shortage'

AUTHORS



Tim Forcey

Energy Advisor, Melbourne Energy Institute at University of Melbourne



Mike Sandford

Professor of Geology and Director of Melbourne Energy Institute at University of Melbourne

DISCLOSURE STATEMENT

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Mike Sandford receives funding from the Australian Research Council, and collaborates with Geoscience Australia.



Provides funding as a Founding Partner of The Conversation AU.
www.melb.edu.au



Rising gas prices, driven by the development of Queensland's exports, could end up driving domestic customers away. AAP Image/Chris Hunt

Gas developers have been ominously warning of impending gas shortages in New South Wales, with **official forecasts** from planning authorities pointing to steady or rising demand. Yet **our analysis** suggests that these forecasts are likely well off the mark, that gas demand in NSW will fall, and that in reality NSW is facing an inevitable price shock, not a gas shortage.

<http://theconversation.com/a-crash-in-gas-use-is-more-likely-than-the-forecast-shortage-36764>

Time for Tony Abbott to join renewable energy's flow

The government is leading a battle against the growth of renewable energy in Australia. For the nation's sake, it is one fight Tony Abbott should drop.

EDITORIAL



Spending on large-scale renewable energy sank 88 per cent last year to \$240 million while global investment advanced 16 per cent. *Photo: Graham Tidy*

On Sunday, US President Barack Obama will visit India where he is widely expected to place climate change and renewable energy high on his agenda – much as he did during his summit in China last November.

With China's economy cooling off – registering its slowest growth last year since 1990 in the wake of the Tiananmen Square massacres – Australia's mineral exporters are hoping India will take up any slack.

<http://www.smh.com.au/comment/smh-editorial/time-for-tony-abbott-to-join-renewable-energys-flow-20150122-12qlrn.html>

28 January 2015, 2:17pm AEDT

Bureau's weather records to be reviewed again – sure, why not?

AUTHOR



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DISCLOSURE STATEMENT

Ailie Gallant receives funding from the Australian Research Council.



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Adjusted data from Australian weather stations has been peer-reviewed before. But the government's new technical panel could still offer useful advice. [Blogge/Wikimedia Commons, CC BY-SA](#)

The federal government's new "Technical Advisory Forum" on weather data, **announced by parliamentary environment secretary Bob Baldwin last week**, will "review and provide advice on Australia's official temperature data set". This data set, known as **ACORN-SAT** and maintained by the Bureau of Meteorology, is the primary record used for monitoring temperature trends around the country.

<http://theconversation.com/bureaus-weather-records-to-be-reviewed-again-sure-why-not-36592>

30 January 2015, 2:55pm AEDT

Who's been affected by Australia's extreme heat? Everyone

AUTHOR



Mary Voice

Lecturer (climate) at University of Melbourne

DISCLOSURE STATEMENT

Mary Voice has in the past received funding from Managing Climate Variability programs of the rural R&D corporations. She is affiliated with the Australian Meteorological and Oceanographic Society and the not-for-profit Climate Alliance.



Provides funding as a Founding Partner of The Conversation AU.
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Queensland's drought conditions have been worsened by persistent high temperatures. AAP Image/Dan Peled

Australia has been hit by two years of heat: 2013 was the **hottest ever recorded** and 2014 wasn't far behind, **taking third place**. The country has also sweltered through **several significant heatwaves**, and, though you might not have noticed them so much, episodes of **unusual winter warmth** too.

<http://theconversation.com/whos-been-affected-by-australias-extreme-heat-everyone-36116>

Greenhouse gas emissions

Pressure on Australia to slash emissions - but no cost-effective policy to get us there

We have been shouting so loudly about how we had to avoid getting 'ahead of the world' that we seemed not to notice we were being left behind



Lenore Taylor, political editor

@lenoretaylor

Wednesday 12 November 2014
18.40 AEST



Comments
222



Tony Abbott still insists 'coal is good for humanity'. Photograph: Greg Wood/AFP/Getty Images

Ross Garnaut is usually professorial in his language. But the academic who wrote two voluminous climate policy reports for the former government used front-bar vernacular when asked where Wednesday's historic climate announcement by China and the US has left Australia. "Up shit creek," he said.

<http://www.theguardian.com/environment/2014/nov/12/pressure-on-australia-to-slash-emissions-but-no-cost-effective-policy-to-get-us-there>

A US-India energy deal would highlight Australia's failings

By [Guy Ragen](#) - posted Tuesday, 27 January 2015

Yesterday, India and Australia both celebrated our respective national holidays. What takes place in India on and around Monday could have repercussions for international climate politics in 2015. It could also once again highlight how far behind Australia has fallen.

India is marking Republic Day with its traditional parade through Delhi. The new Indian Prime Minister, Narendra Modi, will be joined by his guest, President Obama.

The presidential visit is highly anticipated for a number of reasons. In particular, there is guarded expectation that some sort of US-India climate and energy deal will be signed off

during the President's visit. It won't be as far-reaching as the historic US-China agreement in November, but it would be another clear step on the path to the signing of a global agreement at the UN conference in Paris in November.

Guy Ragen is a climate change campaigner for the Australian Conservation Foundation.

<http://www.onlineopinion.com.au/view.asp?article=17038>

29 JAN 2015: REPORT

Natural Gas Boom Brings Major Growth for U.S. Chemical Plants

The surge in U.S. production of shale gas is leading to the rapid expansion of chemical and manufacturing plants that use the gas as feedstock. But environmentalists worry these new facilities will bring further harm to industrialized regions already bearing a heavy pollution burden.

BY RACHEL CERNANSKY

The hydraulic fracturing of shale formations in the United States has led to a bonanza of natural gas production and a well-publicized drop in natural gas prices. But another, less-heralded development also is closely tied to the shale gas revolution — the rapid growth of chemical plants and manufacturing facilities that use cheap natural gas to produce key ingredients found in everything from plastics to fertilizer to liquid fuels.

“Plants use natural gas like a bakery shop uses flour,” said Dan Borne,



ABOUT THE AUTHOR

Rachel Cernansky is a Denver-based freelance journalist who covers the environment and food issues. She has written for *Matter*, *Grist*, *The New York Times*, *National Geographic News*, and other publications. Previously for *Yale Environment 360*, Cernansky reported on efforts to recycle food waste into biogas.

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http://e360.yale.edu/feature/natural_gas_boom_brings_major_growth_for_us_chemical_plants/2842/

29 January 2015, 2:44pm AEDT

Explainer: wilderness, and why it matters

AUTHORS



Brendan Mackey

Director of the Griffith Climate Change Response Program at Griffith University



Nicole Rogers

Senior lecturer, School of Law & Justice at Southern Cross University

DISCLOSURE STATEMENT

Brendan Mackey has served on expert committees which have provided advice to the Australian, Tasmanian and Queensland governments on matters of natural heritage and conservation policy. He serves on the Council of the International Union for the Conservation of Nature (IUCN).

Nicole Rogers does not work for, consult to, own shares in or receive funding from any company or organisation that would benefit from this article, and has no relevant affiliations.



The potential rezoning of Tasmania's Wilderness World Heritage Area for tourism development begs the question: just what is wilderness, and what is it good for? *The Wilderness Society* (AAPI)

The Tasmanian government this month released a draft of the **revised management plan** for the Tasmanian Wilderness World Heritage Area, which proposes rezoning certain areas from "wilderness zones" to "remote recreation zones".



Provides funding as a Member of The Conversation AU.
griffith.edu.au

<http://theconversation.com/explainer-wilderness-and-why-it-matters-36591>



Dumont d'Urville - French explorer

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Sunday 25 January 2015 7:45AM

Author Edward Duyker wrote a biography of the French explorer Dumont d'Urville, who was born in 1790 and died in 1842. His full name was Jules Sébastien-César Dumont d'Urville and he is sometimes called France's Captain Cook. Edward Duyker talks about d'Urville's scientific contribution, including the plants and animals he collected.

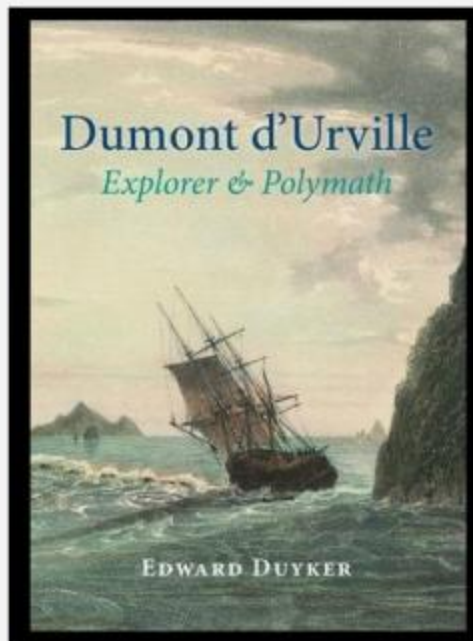


IMAGE: EDWARD DUYKER'S BIOGRAPHY OF DUMONT D'URVILLE



Sundays 7:45am
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<http://www.abc.net.au/radionational/programs/ockhamsrazor/dumont-d27urville---french-explorer/5947346>



Above, the Trinity test fireball, 0.016 second after detonation. Color added. (Credit: via [Wikimedia Commons](#))

DID THIS 1945 NUCLEAR TEST TRIGGER A NEW AGE?

UNIVERSITY OF CALIFORNIA, BERKELEY → [Original Study](#)

Posted by [Robert Sanders-UC Berkeley](#) on January 20, 2015

Scientists have proposed that the Trinity nuclear test conducted on July 16, 1945 was the dawn of the Anthropocene age, an era in which humans increasingly shape the planet.

Scientists divide Earth history into epochs, periods, and other time units bounded by geological or biological signals, such as those left in the rock record by the mass extinctions that ended the Cretaceous and Permian eras, and the end of the last ice age that kicked off the current Holocene epoch.

<http://www.futurity.org/anthropocene-age-trinity-841102/>

13 JAN 2015: ANALYSIS

Could Global Tide Be Starting To Turn Against Fossil Fuels?

From an oil chill in the financial world to the recent U.S.-China agreement on climate change, recent developments are raising a question that might once have been considered unthinkable: Could this be the beginning of a long, steady decline for the oil and coal industries?

BY FRED PEARCE

Boom may be turning to bust for fossil fuels. Market forces are combining with the prospect of new limits on carbon emissions from major economies



ABOUT THE AUTHOR

Fred Pearce is a freelance author and journalist based in the UK. He serves as environmental consultant for *New Scientist* magazine and is the author of numerous books,

including *The Land Grabbers*. Previously for *Yale Environment 360*, he has written about why setting a global carbon budget is difficult and efforts to protect the Indonesian coast with mangrove forests.

MORE BY THIS AUTHOR

http://e360.yale.edu/feature/could_global_tide_be_starting_to_turn_against_fossil_fuels/2837/

06 NOV 2014: ANALYSIS

What Is the Carbon Limit? That Depends Who You Ask

Scientists are offering widely varying estimates of how much carbon we can emit into the atmosphere without causing dangerous climate change. But establishing a so-called carbon budget is critical if we are to keep the planet a safe place to live in the coming century.

BY FRED PEARCE

How much carbon can we safely emit into the atmosphere without the planet suffering dangerous climate change? It would be good to know. The



ABOUT THE AUTHOR

Fred Pearce is a freelance author and journalist based in the UK. He serves as environmental consultant for *New Scientist* magazine and is the author of numerous books, including *The Land Grabbers*. Previously for *Yale Environment 360*, he has explored why China may end coal's big boom and an alternative to sweeping international climate treaties.

MORE BY THIS AUTHOR

http://e360.yale.edu/feature/what_is_the_carbon_limit_that_depends_who_you_ask/2825/

European Journal of **Soil Science**

Invited Review

Beyond carbon sequestration: soil as conduit of solar energy

H. H. Janzen

First published: 24 October 2014 [Full publication history](#)

DOI: 10.1111/ejss.12194 [View/save citation](#)

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Special Issue:
Special issue on Including
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Summary

The prospect, so alluring, of sequestering carbon (C) to mitigate CO₂ build-up in air has prompted a flurry of soil studies, but questions still linger about whether early optimism was fully justified. My objectives are to review briefly the mechanisms of carbon accrual, consider constraints on soil C sequestration for mitigating climate, and contemplate questions for further collective conversation. Carbon in soil is ever in flux; not a stagnant reservoir, but a stream of atoms flowing through. Its instantaneous stock can be increased by adding more atoms to the stream or by slowing their rate of flow to CO₂. The latter (decay) is influenced by intrinsic recalcitrance of the substrate, by protective interactions of carbon with the mineral matrix, and by the favourability of localized conditions for biological activity. Together, these mechanisms create a continuum of susceptibility to decay. Although many practices can abet carbon accrual, their effectiveness is constrained by the finitude of carbon gain, possible effects on other greenhouse gas emissions, susceptibility to future loss, the difficulty of measuring gains precisely, and the complexity of landscape-scale dynamics. In the light of these problems and prospects, I propose, as a working hypothesis, that we focus less on carbon, and more on using wisely the energy it carries; in other words, maximizing carbon 'stocks' is less critical than

Water supply broken by drought

DAISY DUMAS

29 Dec, 2014 08:55 AM



That (drought) was supposed to be one in 100 but here we are 10 years later with another one

Dead trees at Menindee Lakes.

THE western NSW town of Broken Hill is facing dire water shortages as the drought-hit Menindee Lakes dry out to "big sandpits".

Faced with the prospect of just 10 to 14 months' worth of water and no rainfall on the horizon, the NSW government has begun work to secure an emergency water source for the population of 19,000.

<http://www.stockandland.com.au/news/agriculture/general/news/water-supply-broken-by-drought/2720202.aspx>

"A new paradigm that sees economic growth, social justice and environmental care advancing together can become the common sense of our age."

Gordon Brown