

NRM on farms



A monthly news summary about climate and natural resources in agriculture.

October 2016

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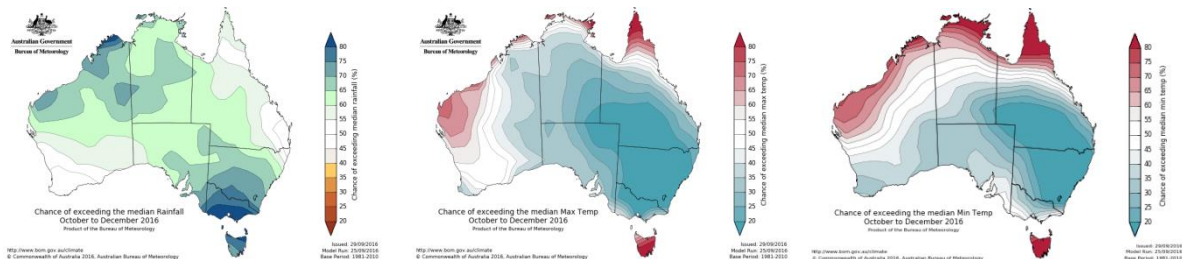
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CLIMATE

NSW seasonal outlook: wetter and cooler than average



NSW is likely to have wetter and cooler than average conditions over the next three months, due to a negative IODE, warmer than average ocean temperatures surrounding northern Australia, and an ENSO-neutral tropical Pacific showing some La Niña-like characteristics.

<http://www.bom.gov.au/climate/outlooks/#/overview/summary/>

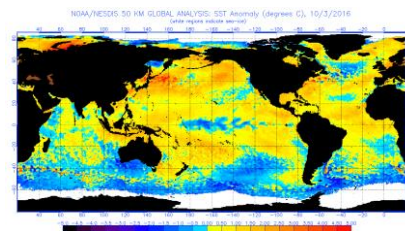
<http://www.bom.gov.au/climate/outlooks/#/overview/video>

Ocean temperatures

Surface temperatures in the central Pacific are ENSO-neutral, but cooler on the equator. Temperatures to the north and east of Australia and across South East Asia remain warm, while cool anomalies in the western Indian Ocean are consistent with the negative IOD.

<http://www.ospo.noaa.gov/Products/ocean/sst/anomaly/index.html>

<http://www.bom.gov.au/climate/enso/#/tabs=Sea-surface>



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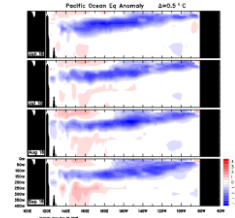
Pacific subsurface cooling but warmth in the west

Cool anomalies span the entire width of the equatorial Pacific Ocean, although temperatures in the top 50 m of water west of 170°W have been slightly warmer than average. Warm anomalies in the western equatorial Pacific strengthened during September.

<http://www.bom.gov.au/climate/enso/>

ENSO outlook remains at La Niña watch

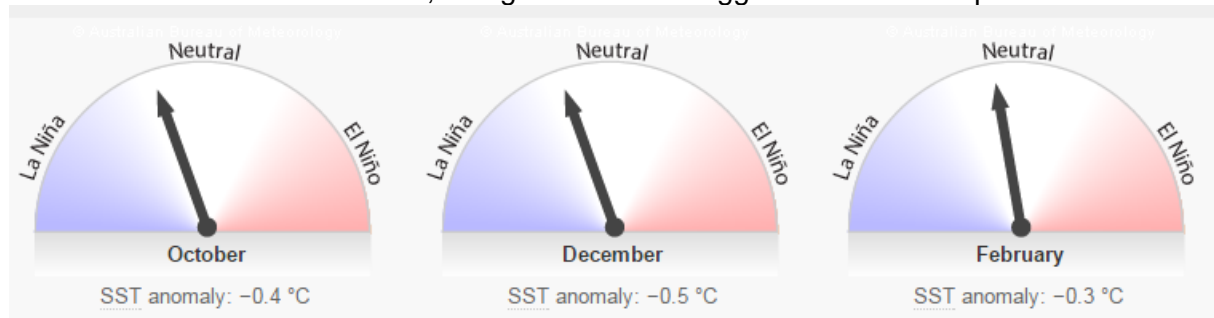
While Enso is currently at neutral level, there is a weak La Niña-like pattern in the tropical Pacific Ocean, and warm ocean temperatures around Australia, so there may still be some La Niña-like impacts on the Australian climate. August was the first month to show persistent below average cloud around the Date Line (typical of La Niña), and this pattern has continued during September. Likewise, the Southern Oscillation Index has exceeded La Niña thresholds for the past two weeks. Hence the ENSO Outlook remains at La Niña WATCH.



<http://www.bom.gov.au/climate/enso/>

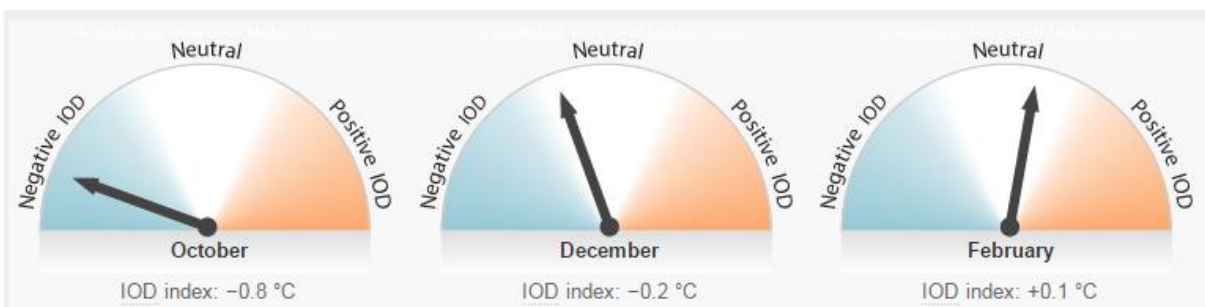
Model outlook suggests neutral ENSO

Most international climate models surveyed indicate the Pacific is likely to remain at ENSO neutral levels to the end of 2016, though one model suggests a La Niña is possible.



<http://www.bom.gov.au/climate/model-summary/>

IOD likely to remain moderate to strong



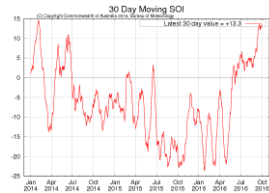
Most surveyed models agree that the current negative Indian Ocean Dipole is likely to remain at moderate to strong levels until at least mid-spring, with a return to neutral conditions by December.

<http://www.bom.gov.au/climate/enso/#tabs=Indian-Ocean>

SOI rises to La Nina levels

The SOI rose to La Nina levels during September; sustained positive values of the SOI above +7 typically indicate La Niña.

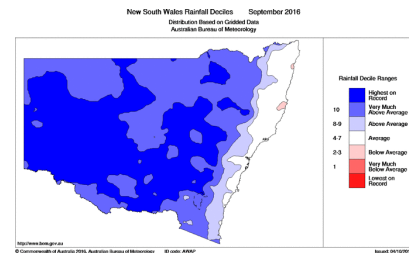
<http://www.bom.gov.au/climate/enso/#tabs=SOI>



NSW's wettest September since 1903

September 2016 was NSW's wettest since 1903, with well above average rainfall west of the Great Dividing Range, and statewide average rainfall three times the historical average. The heavy rain contributed to the eighth coldest September, but night-time temperatures were well above average in eastern NSW.

<http://www.bom.gov.au/climate/current/month/nsw/summary.shtml>



NSW DPI seasonal conditions report

Subscribe to NSW DPI's seasonal conditions report, and the climate summary which provides a snapshot of the monthly report in an easy to read four-page format with additional graphs and charts.

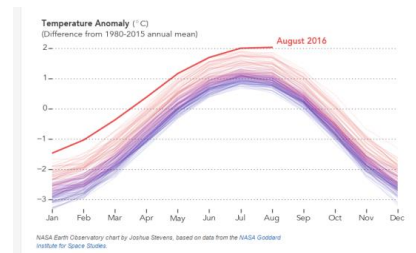
<http://www.dpi.nsw.gov.au/agriculture/emergency/seasonal-conditions/regional-seasonal-conditions-reports>

GLOBAL CLIMATE

Global August temperature record

August 2016 was the warmest August in 136 years of modern record-keeping, according to NASA, and tied with July 2016 for the warmest month ever recorded. August was 0.16 °C warmer than the previous warmest August in 2014, and 0.98°C warmer than the mean August temperature from 1951-1980.

<http://earthobservatory.nasa.gov/blogs/earthmatters/2016/09/12/heres-how-the-warmest-august-in-136-years-looks-in-chart-form/>



Ocean warming link to 2010-11 La Nina

Research into the causes of the extreme rainfall conditions of the 2010-11 La Niña have identified that additional ocean warming enhanced onshore moisture transport onto Australia and ascent and precipitation over the northeast where rainfall was 84% above average. The results highlight the role of long-term ocean warming for modifying rain-producing atmospheric circulation conditions, and increasing the likelihood of extreme precipitation for Australia during future La Niña events.

<http://onlinelibrary.wiley.com/wol1/doi/10.1002/2015GL065948/abstract>

How ocean warming is changing global weather

This report has found the upper depths of the world's oceans have warmed significantly since 1995 and changed global weather patterns, with an increasing number of severe hurricanes

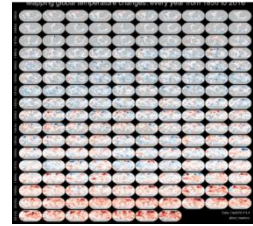
and typhoons, and hurricanes in traditionally cooler regions; significant loss of ice in the Arctic; and movement of the warmer currents associated with the El Niño cycle moving to the central Pacific rather than the west.

<https://www.sciencedaily.com/releases/2016/09/160920152812.htm>

150 years of global temperatures in maps

These tiny maps show the annual average temperature anomaly for every year from 1850 through 2016 using data from the UK Met Office. They show how much the planet has warmed since the 1850s, including the rapid rise over the past three decades.

<http://www.scientificamerican.com/article/167-tiny-maps-tell-a-huge-climate-story/>



CLIMATE IMPACTS

Betting the farm

This Background Briefing program from ABC looks at how the changing climate and increasing weather extremes are affecting farming enterprises so much that farming is becoming more of a gamble than it ever was.

<http://www.abc.net.au/radionational/programs/backgroundbriefing/2016-10-02/7888334#transcript>

Review of Australian climate science capability

The Australian Academy of Science is conducting a review of Australian climate science capability and future requirements, in order to better understand the capabilities (including expertise and infrastructure) that are needed in Australia. The review is due out this month.

<https://www.science.org.au/supporting-science/other-initiatives/australian-climate-science-capability-review>

New Centre for Excellence in Climate Extremes

UNSW has received funding for a new Centre of Excellence for research into climate extremes, building on its Centre of Excellence for climate system science. The new centre will use high performance computing, massive data, maths, physics and climate science to research climate extremes and revolutionise Australia's ability to predict them into the future.

<http://newsroom.unsw.edu.au/news/general/unsw-awarded-91-million-three-national-centres-research-excellence>

Climate impacts occurring sooner than expected

Victorian research shows the climate is changing much faster than expected. The pattern of pasture growth in the last 15 years fits 2009 predictions for the period 2030-70. The shift is due to reductions in rainfall, leading to an earlier end to the growing season, and increases in winter temperatures, resulting in higher winter growth rates.

<http://us2.campaign-archive1.com/?u=74302347147ea18ae4e5d30a6&id=d9a34e7e81&e=b3d0f6fd8b>

WA climate-ready agriculture

This 12 page statement from DAFWA concludes that while climate change is a long term issue, the most important issue in the short to medium term is to increase enterprise resilience to climate variability. Commonly identified research and development themes include systems-based research to continue delivering incremental adaptations for short to medium-term climate variability and change; improved weather forecasting and climate

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projections available at a local scale; and better understanding of the potential long-term impacts of climate projections on farming systems and related industries.

<http://researchlibrary.agric.wa.gov.au/cgi/viewcontent.cgi?article=1050&context=bulletins>

Climate change may outpace food grasses' adaptation

US researchers have found that forecasted shifts in climate by 2070 would occur too quickly for species of food grasses, including wheat, corn, rice and sorghum, to adapt.

<http://rsbl.royalsocietypublishing.org/content/12/9/20160368>

Climate modelling methods all show wheat yield decline

Two different simulation methods and one statistical method predicting the impact of rising temperatures on global wheat production all concluded that with a 1°C global temperature increase, global wheat yield is projected to decline between 4.1% and 6.4%. Projected relative temperature impacts from different methods were similar for major wheat-producing countries China, India, USA and France, but less so for Russia. Warmer regions are likely to suffer more yield loss with increasing temperature than cooler regions.

<https://www.sciencedaily.com/releases/2016/09/160912143006.htm>

Microbe inoculation helps plants in drought

US research that inoculated young poplar cuttings with a cocktail of microbes isolated from wild poplar and willow trees growing in unfavourable conditions found the cuttings doubled their root biomass and increased leaf and stem growth by almost 30 percent compared with poplars without the added microbes. When exposed to drought conditions, the poplars with microbes also stayed green with robust leaves and stems, while their counterparts browned and wilted. The microbes may have enabled plants to accumulate more nutrients and use water more efficiently, and produce molecules that promoted plant growth and greenness. Gaining more root, stem and leaf mass also makes plants able to store more water.

<https://www.sciencedaily.com/releases/2016/09/160919131038.htm>

Climate risks to coffee

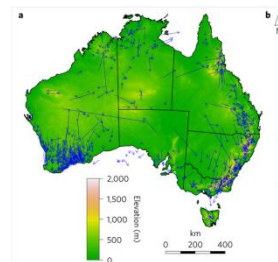
Climate change is projected to cut the global area suitable for coffee production by as much as 50% by 2050. Adaptation strategies include developing more resilient production systems, diversifying crops, and shifting plantations upslope. Consumers can also take steps to help producers build their capacity to adapt to climate change.

http://www.climateinstitute.org.au/verve/resources/TCI_A_Brewing_Storm_FINAL_28082016_web.pdf

Eucalypts will move as climate changes

A study of climate impact on Australia's eucalypts suggest that within the next 60 years 91% of species distributions across Australia will shrink an average 51% and shift south on the basis of projected suitable climatic space. Approximately 90% of the current areas with concentrations of old evolutionary diversity are predicted to disappear or shift their location.

<http://www.nature.com/nature/journal/v537/n7621/full/537453d.html>



How to spot climate change in your garden

This article from The Conversation by DPI researcher Rebecca Darbyshire outlines how climate change is affecting flowering and fruiting cycles.

<https://theconversation.com/climate-change-is-happening-in-your-garden-heres-how-to-spot-it-65730>

Climate adversity and rural resilience

A recent study into rural wellbeing and climate adversity found that strong 'community spirit', social cohesion and social connectedness promote individual and community resilience, buffering the negative effects of drought and floods. But as these events increase in frequency, severity and duration, rural health professionals need to consider the long term emotional impact of these events in rural communities.

http://www.rrh.org.au/publishedarticles/article_print_3071.pdf

Heatwave risk in older rural residents

A study of heatwave risk, preparedness and adaptation strategies in rural Australian residents aged over 65 years found that participants generally had a low perception of heatwave risk, and most had stoic natures and a strong connection to place. These factors, in conjunction with the activities associated with a rural lifestyle, put older rural Australian residents at increased risk of illness or death during heatwave events.

<https://www.aag.asn.au/documents/item/867>

<http://www.ifa-fiv.org/wp-content/uploads/2016/07/Thu-GreatHall-1415-Wilson.pdf>

Australian attitudes to climate change

The Climate Institute's survey on attitudes to climate change has found more people think climate change is occurring, and most believe federal government has a responsibility to drive climate action, and state governments should implement renewable energy incentives.

http://www.climateinstitute.org.au/verve/resources/COTN_2016_Final_WEB_260916.pdf

Storm

This strikingly illustrated book looks at the nature of storms, how they have changed the course of history, and how humans have tried to control them through religion, superstition and science.

<http://www.publish.csiro.au/nid/18/pid/7693.htm>

CLIMATE TOOLS

Helping farmers plan for climate adaptation

This paper looks at ways agricultural science and economics can contribute to farmers' analysis of impacts and adaptation to climate change. These include emphasising the principles of farm management rather than defining optimal farm plans; the use of scenario planning to explore possible futures in a turbulent environment for farming; a focus on short-term adjustments as a path to longer term adaptation; re-gaining the trust of some farmers towards climate change scientists through better communication strategies; and understanding linkages between adaptation options and enabling factors and technologies.

<http://link.springer.com/article/10.1007/s10113-014-0743-4>

Farmers for Climate Action survey

Newly formed group Farmers For Climate Action is surveying farmers on their experiences of, and attitudes towards, climate change, and will use the results to inform their practices and areas of focus. Farmers who complete the five-minute survey will also go in the draw to win a solar system and battery storage worth \$15,000.

<http://www.farmersforclimateaction.org.au/>

https://www.surveymonkey.com/r/farmers_survey

Frost resources

GRDC has compiled a stream of resources on incidence and management of frost in 2016, including case studies on managing frost risk.

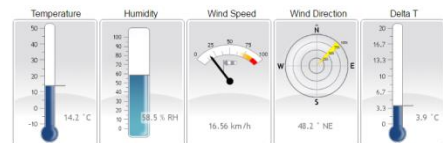
<https://storify.com/theGRDC/frost>

Weather station for Henty

Riverina Local Land Services has led a collaboration to establish a permanent automatic weather station at the Henty field days site, providing real time information to assist landholders' decision making. Information can be accessed from the Riverine Plains website, Riverina LLS website shortly.

<http://203.24.62.96/rivplains/henty/hentyPC.html>

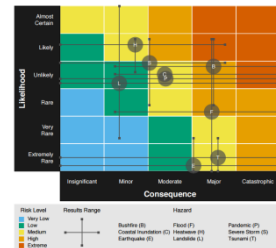
Henty Weather



Tasmania's natural disaster risk

Assessment of Tasmania's exposure to natural disasters shows that bushfire remains the number one hazard to people and property, but new threats include coastal flooding, pandemic influenza and an increasing likelihood of heatwaves. Under the National Emergency Risk Assessment Guidelines, all states and territories are required to produce risk assessments by June 2017.

<http://www.ses.tas.gov.au/h/em/risk-mgmt/tsndra>



Communicating flood risk

A UK consultation about communicating flood risk found that authorities focussed far too much on the scientific information, with too much detail. People wanted to know whether they were at risk, what they needed to do if they were, and what the authorities were doing. Ensuring that information is meaningful, relevant, actionable and empowering is key to improving how people manage their flood risk.

<https://www.gov.uk/check-flood-risk>

Cool Farm Alliance

The Cool Farm Alliance is an industry platform for sustainable agriculture metric development and use. Its mission is to enable growers to make more informed on-farm decisions that reduce their environmental impact. It has developed on farm Cool Farm Tools for greenhouse gases and biodiversity.

<https://coolfarmtool.org/>

Feedback wanted on CoastAdapt

NCCARF is seeking feedback on its new CoastAdapt tool which includes sea level rise data, coastal geomorphology, risk planning, a community of practice, case studies and manuals.
<https://coastadapt.com.au/>

Climate change funding for regional communities

Funding of \$15,000-\$80,000 per project is available to help regional communities build resilience to climate change. Applications close Monday 10 October 2016.
<http://www.lgnsww.gov.au/policy/climate-change/building-resilience>

EMISSIONS

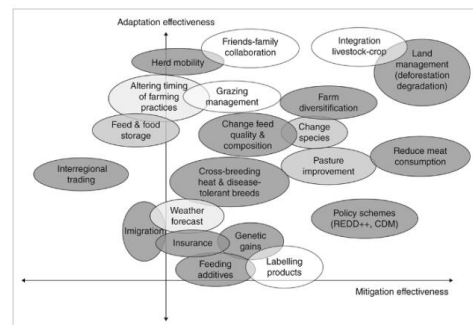
Lower beef emissions from wheat feed

Victorian researchers into emissions and production effects of feeding different grains to dairy cattle have found that methane emissions from cattle offered wheat were significantly lower than from cows offered barley or corn. The persistency of wheat's inhibitory effect on methane emissions is being studied in an ongoing experiment.
<http://www.piccc.org.au/research/project/699>

Mitigation potential of livestock

A Spanish review of recent literature on livestock and climate change concludes that grazing and mixed systems have strong mitigation potential through practices such as moderate grazing, soil conservation, and use of local resources; whereas most technological and market-oriented mitigation strategies are generally more applicable to large-scale confined operations of some industrial systems. However, mitigation objectives are unlikely to be met only through using these solutions, and changes in the demand side are needed.

<http://onlinelibrary.wiley.com/doi/10.1002/wcc.421/full>



Global agricultural emissions analysis

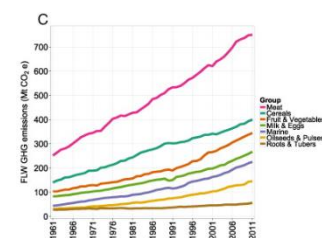
A new paper on agricultural greenhouse gas emissions shows that developed regions such as Australia have increased production while reducing greenhouse gas emissions, while developing and transitional regions have increased both production and emissions. All regions have reduced emissions per produced product, but to varying degrees.

<http://www.sciencedirect.com/science/article/pii/S0959378015300753>

Food waste emissions tripled in 50 years

In the 50 years between 1961 and 2011 food loss waste and associated greenhouse gas emissions tripled, with emissions from meat production and consumption inefficiencies the largest contributors.

<http://www.sciencedirect.com/science/article/pii/S0048969716314863>

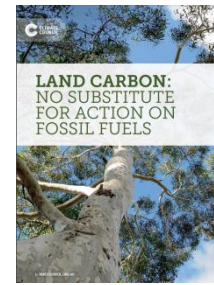


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Carbon sequestration no match for fossil fuel emissions

The Climate Council's latest report says that land-based mitigation is very important in mitigating climate change but cannot make up for fossil fuels pumping carbon into the atmosphere. The challenge is to reduce fossil fuel emissions deeply and rapidly, and return back to the land as much as possible of the atmospheric carbon that originated from the land.

<http://theconversation.com/putting-carbon-back-in-the-land-is-just-a-smokescreen-for-real-climate-action-climate-council-report-65475>



Emissions need to reduce substantially by 2030

Analysis by the energy advisory firm RepuTex has found that Australia's emissions will need to be reduced by 8 to 9 million tonnes of CO₂-e (Mt) annually to meet Australia's 26 per cent emissions reduction target by 2030. Excluding safeguard sectors, aggressive policy settings will be required to meet Australia's 2030 target, such as the tripling of ERF funding and generation from Solar PV, while electricity and vehicle efficiency will need to double.

<http://www.reputex.com/research-insights/framing-australias-2030-energy-climate-policy-mix/>

ERF audit results

An audit of the Clean Energy Regulator's crediting and selection of carbon abatement to purchase under the Emissions Reduction Fund has found that, while sound arrangements are in place, some aspects of the regulatory process require further attention, such as the level of documentation.

<https://www.anao.gov.au/work/performance-audit/emissions-reduction-fund-abatement-crediting-and-purchasing>

SOILS

SOM and WHC are effective yield buffers

US research into the effects of weather and soil properties on maize yield over 15 years has found that soil organic matter and water holding capacity were the most effective buffers against yield instability. Greater water holding capacity, which increases with more soil organic matter, gives crops an advantage in hot, dry climates. Practices to increase soil organic matter include cover crops, avoiding excessive soil disturbance, increasing crop rotation length, and adding composted manures.

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0160974>

Impacts of soil, climate, and farming on C sequestration

A simulation study of the impacts of soil, climate, and farming practices on soil organic carbon sequestration in Australia has found that the initial soil C content has the largest impact on SOC over years, followed by the climate and fertilisation practices. Tillage and stubble managements have a lower impact. The study raised the question of cover crop potential to increase SOC as well as to limit N₂O emissions, and showed complexities in managing SOC, N₂O emissions, and NO₃ leaching together. Agricultural practices that truly mitigate climate change cannot simply sequester SOC, but must at the same time limit emissions of other GHGs.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4870243/>

Ten year trial of organic farming systems

A ten year US trial into organic cropping systems, amendments and tillage found that no one factor consistently increased the amount of vegetables produced, and there were minimal interactions between management practices. However, the mixed compost of dairy manure, straw, sawdust, and yard debris improved the soil's physical properties more than sawdust and poultry litter. There were also benefits from tilling with the rotary spader which saved time, improved soil compaction and seed bed quality, and sometimes improved yields.

<https://www.sciencedaily.com/releases/2016/09/160914130932.htm>

Soil carbon cycling is slower than assumed

Radiocarbon dating of soils shows that potential for carbon sequestration to combat climate change has been overestimated by as much as 40% due to assuming a much faster cycling of carbon through soils than is the case. This means it will take hundreds or even thousands of years for soils to soak up large amounts of the extra CO₂ pumped into the atmosphere by human activity.

<http://science.sciencemag.org/content/353/6306/1419>

Soil P at risk levels in Sydney catchments

Analysis of pastoral soils in Sydney drinking water catchments found that phosphorus levels at 20% of sites were considered to present a significant environmental risk where the priority should be to improve pasture management and reduce the risk of phosphorus loss in surface erosion. Where dairy effluent has to be applied to soils already high in P, a plan is needed to manage stormwater run-off.

<http://www.publish.csiro.au/sr/SR15185>

Biochar applications

CSIRO Soil Research journal has produced a virtual issue on biochar applications for restoring and remediating soils. Most papers were published in 2014 and 2015.

<http://www.publish.csiro.au/sr/content/virtualissues?id=1802>

Soils in schools

Soils in Schools is an initiative of Soil Science Australia to communicate and educate school children on the relevance of soils in everyday life and to encourage a wider interest in our soil resources.

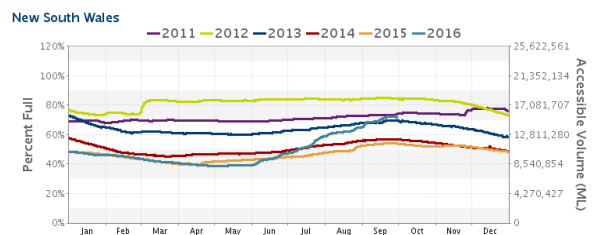
<http://www.soilsinschools.com.au/>

WATER

Water storages

NSW's water storages are at 70% capacity, similar to September 2011 levels, and 18% higher than this time last year.

<http://water.bom.gov.au/waterstorage/awris/>



Water trading and salinity

Research into MDB water trading has found that larger volumes of permanent water were likely to be sold from areas suffering higher dryland salinity. In addition, increases in groundwater salinity concentration were found to decrease volumes of surface-water entitlements sold, providing evidence that groundwater entitlements (where they are viable substitutes) have been increasingly used as substitutes for surface-water. Other key influences on water sales included water market prices and net rainfall.

<http://www.worldscientific.com/doi/abs/10.1142/S2382624X16500041>

Market-based strategy for sustainable water

This article from National Geographic shows how water markets have proven immensely effective in many regions for stimulating water conservation and transferring saved water to other users who need more. The cost of providing water to new users through markets is far less than the cost of infrastructure-based approaches and further damage to the environment can be averted.

<http://voices.nationalgeographic.com/2016/08/23/a-market-based-strategy-for-sustainable-water-management/>

Evaluation of soil moisture data sets used in Australia

In this study 11 soil moisture data sets were evaluated to determine how they compared across Australia and its varied climate zones. The study highlighted relative strengths and weaknesses of each data set to allow for a more informed choice by users.

<http://www.sciencedirect.com/science/article/pii/S0034425716303583>

Australia's water reform journey

The Australian Water Reform Narrative is documenting the evolution of Australian water policy and management over the past three decades, arrangements preceding and during the Millennium Drought, and lessons learned through that critical water management period. Papers are freely available on registration.

<http://waterpartnership.org.au/australian-water-reform-narrative/>

Australian Balanced Water Fund

The Australian Balanced Water Fund invests in permanent water rights to provide water security for agriculture and restore critical wetlands, while delivering financial returns to investors. The Fund works with farmers to acquire and hold a portfolio of permanent water rights, sells or leases most of the annual temporary water allocations back into the agricultural community, and donates remaining allocations to the environment each year. The environmental donations mostly occur in wet years when farmers least need water.

<http://www.naturevestnc.org/business-lines/water-markets/australian-balanced-water-fund/>

Ricegrowers' water toolkit

This toolkit is designed to help ricegrowers navigate water market options and access.

<http://www.rga.org.au/f.ashx/Ricegrowers-Water-Toolkit-Online-.pdf>

BIODIVERSITY

Background to NSW biodiversity and LLS Bills

This report from NSW Parliament outlines the key sources and debates on the NSW Government's draft Biodiversity Conservation Bill 2016, and draft Local Land Services Amendment Bill 2016. The Government aims to introduce this legislation this month, to commence in two stages in 2017 if passed by Parliament. These Bills follow on from the final report of the Independent Biodiversity Legislation Review Panel.

<http://apo.org.au/resource/biodiversity-conservation-bill-2016-and-local-land-services-amendment-bill-2016>

Threatened species legislation in NSW: a recent history

This e-brief examines the development of threatened species legislation in NSW, with a particular focus on the Threatened Species Conservation Act 1995, and provides a snapshot of threatened species in NSW today.

<http://apo.org.au/resource/threatened-species-legislation-nsw-recent-history>

A guide to common fungi of coastal NSW

NSW has approximately 36,000 different species of fungi, 30,000 of them microscopic. Of the 6000 species that produce visible fruit bodies, less than half have been formally described and named. This NSW DPI guide is designed to help users identify fungi in the field, and contains information on what fungi are, their importance and locations.

<http://www.tocal.nsw.edu.au/publications/list/field-crops-and-pastures/fungi-of-coastal-nsw>



Grasses of NSW slopes and adjacent plains

There are more than 450 species of native and introduced grasses on the NSW slopes. This guide concentrates on the more widespread and common species to help users recognise and manage them appropriately.

<http://www.tocal.nsw.edu.au/publications/list/field-crops-and-pastures/grasses-of-the-nsw-slopes>

Ecological intensification on farms

A three year EU project looking at ways to intensify ecological activity in agriculture has produced a number of publications on soil management, pollination, and biological controls.

<http://www.fp7liberation.eu/home/publications>

Plant diversity alleviates crop flooding

A long-term biodiversity experiment in central Germany has found that monocultures were less able to cope with flooding compared with a mixture of species grown together. Soil beneath high diversity mixtures was more porous than below monocultures, allowing water to drain faster and maintain higher levels of oxygen. Grasses stood out as a strong group, unaffected by flooding whether grown alone or in mixtures, while legumes (important nitrogen-fixing plants) were severely affected.

<https://www.sciencedaily.com/releases/2016/09/160920083013.htm>

Mid Lachlan Landcare paddock tree project

Almost 500 new strategically located eucalypt trees are being planted in paddocks around Cowra to reconnect vital woodland habitat for local wildlife. Many of the old, solitary paddock trees are starting to die off so Mid Lachlan Landcare has partnered with Cowra Woodland Birds Program and local landholders to provide future trees. New trees are guarded with heavy duty mesh so they are protected from stock.

<http://centraltablelands.ils.nsw.gov.au/resource-hub/media-releases/2016/paddock-tree-project-new-hope-for-woodland-birds-and-farm-productivity>

Report dead rabbits

The RabbitScan project team is asking anyone who sees dead rabbits to report them to help with benchmarking before the national release of RHDV1 K5 rabbit virus early in 2017. You can report them using the free app on the RabbitScan website.

www.rabbitscan.org.au



ENERGY

Small economic impact from coal mine moratorium

Economic modelling for The Australia Institute shows that the economic impacts of a moratorium on new coal mines and expansion of existing coal mines, on Queensland, NSW and Australia more broadly would be small.

<http://www.tai.org.au/content/coal-moratorium-and-australian-economy>

Gas research in NSW

The Gas Industry Social and Environmental Research Alliance (GISERA) is expanding from Queensland to undertake projects in Macarthur and Narrabri to understand the impacts and opportunities from different gas development scenarios and provide independent information.

<http://www.gisera.org.au/>

Risks of gas mining in the channel Country

A new report from the Western Rivers Alliance says unconventional gas mining risks land, water and life in the Channel Country. Up to 24,000 wells planned for the region would place extremely high demand on the underground waters of the Great Artesian Basin, and pose significant risk to the flood patterns that are a feature of the region.

<http://apo.org.au/resource/channel-country-crossroads-risks-unconventional-gas-mining-land-water-and-life>

FOOD

Consumers' vegetable buying habits are changing

Research from Horticulture Innovation Australia has found that consumers' fresh vegetable purchasing patterns are shifting. The main motivators for purchase are quality and country of origin. Fewer people are buying on routine or price, and more are buying what's in store and available, or shopping for specific recipes.

<http://ausveg.com.au/media-release/australians-take-fresh-approach-to-vegetable-shopping>

AgMIP research for food security

The Agricultural Model Intercomparison and Improvement Project (AGMIP) brings together agricultural scientists from around the world to research all aspects of food systems, from farming practices and seeds, to economics, climate shocks, and nutrition, to comprehend how to sustainably adapt to the coming changes. You can download presentations from the sixth AGMIP workshop held in France in June.

<http://www.agmip.org/6th-agmip-global-workshop-agenda/>

The challenge of changing food systems

The Global Panel on Agriculture and Food Systems for Nutrition has warned that only a response comparable in scale and commitment to HIV/AIDS and malaria campaigns will be sufficient to meet the challenge of changing food systems. The risk posed by poor diets to mortality and morbidity is now greater than the combined risks of unsafe sex, alcohol, drug and tobacco use.

www.glopan.org/foresight

Victorian Municipal Association endorses food declaration

MAV has endorsed an Urban and Regional Food Declaration, committing to diversity of food production, valuing of food producers, and expansion of the local food economy, and recognising the role of local government in healthy, sustainable and fair food systems. The declaration was developed by the Australian food network Sustain.

<http://www.circlesoffood.org/2016/02/11/new-signatories-to-the-declaration/>

Food safety guide for farmers' markets

The Australian Farmers' Markets Association has published a food safety guide covering regulations for horticulture, poultry, dairy, seafood, meat, wine, food sampling, food handling, labelling and nutrition panels.

<http://farmersmarkets.org.au/resources>

Labelling helps produce sales

A US study that offered watermelons for sale with no label, or labels showing locally grown or grown on land preserved for agriculture, found that consumers were willing to pay the most for watermelons grown locally and on preserved land.

<https://www.sciencedaily.com/releases/2016/09/160916143950.htm>

My Open Kitchen for producers

My Open Kitchen is an online learning course to help food producers use social media to share their food stories and better connect with their consumers. It has won its developer, Sophie Hansen, the 2016 RIRDC Rural Women's Award.

<http://my-open-kitchen.com/>

Community food hubs conference presentations

Presentations from the inaugural Community Food Hubs Conference held in Bendigo in August are now available online.

<http://www.circlesoffood.org/2016/10/02/inaugural-community-food-hubs-conference-bendigo-8-9-august-2016-presentations-feedback/>

LAND USE

Land use survey of Cabonne and Tweed landholders

The University of Newcastle and NSW DPI are seeking rural landholders in Cabonne and Tweed shires to participate in a survey on agricultural and non-agricultural activities undertaken on their land. NSW DPI is funding this work to assess the diversity of agricultural and secondary industries, and rural land uses that affect agriculture.

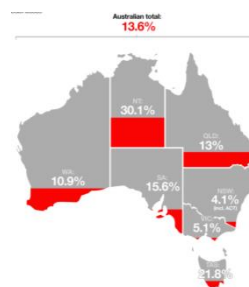
<https://www.surveymonkey.com/r/lurz>

Foreign ownership of agricultural land

The register of foreign ownership of agricultural land shows that 1798 properties in NSW/ACT, covering 2,375,000 ha of agricultural land, are held by foreign hands. The area held is mostly freehold, mostly used for crops and livestock, and represents 4.1% of agricultural land in NSW/ACT.

https://firb.gov.au/files/2016/08/Register_of_foreign_ownership_of_agricultural_land.pdf

<https://theconversation.com/factcheck-is-30-of-northern-territory-farmland-and-22-of-tasmanian-farmland-foreign-owned-65155>



SUSTAINABILITY

Holistic management review

A critical review of Allan Savory's holistic management method has found that no study has established that holistic grazing is or is not superior to conventional or continuous grazing. It concludes that holistic grazing could be an example of good grazing management, but nothing suggests that it is better than other well-managed grazing methods.

https://www.slu.se/globalassets/ew/org/centrb/epok/dokument/holisticmanagement_review.pdf

Review of agricultural RD&E in Victoria

An audit of Victoria's agricultural RD&E has made several recommendations for improving its strategic direction, and concludes that RD&E activities will be a major contributing factor to Victoria's capacity to achieve its 2030 target of doubling food and fibre production, but achieving this goal depends on favourable economic and environmental conditions.

<http://www.audit.vic.gov.au/publications/20160817-Food-Fibre/20160817-Food-Fibre.pdf>

Soil and Water CRCS proposed for funding

High Performance Soils and Future Water are two of seven applicants shortlisted for the \$653 million Cooperative Research Centres (CRC) Program. Successful applications will be announced early next year with funding to commence mid-2017.

<http://minister.industry.gov.au/ministers/hunt/media-releases/applicants-shortlisted-new-research-find-solutions-challenges-facing>

EVENTS

- October 28-30 Pay dirt: National biological farming conference, Cairns
<http://www.nationalbiologicalfarmingconference.org.au/welcome.html>
- November 21 Urban agriculture forum, Melbourne
<http://www.uaf.org.au/>
- December 2 AdaptNSW 2016, Sydney
<https://www.eventbrite.com.au/e/adaptnsw-2016-registration-26745916757>
- December 4-8 7th International Nitrogen Initiative Conference, Melbourne
<http://www.ini2016.com/>
- February 5-9 2017 Restoring ecological processes, ecosystems and landscapes, Armidale
<http://conferencecompany.com.au/revegconf2017/>

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