



Hello and welcome to the new look AdaptNSW newsletter, which profiles the progress of the NSW Adaptation Research Hub and provides insights on climate change research and related activities.

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### **AdaptNSW Annual Forum – 19 November 2018!**

The Office of Environment and Heritage will host its annual climate adaptation forum on Monday 19 November 2018 at Doltone House Darling Island Wharf, Pyrmont.

The event will feature:

- Key note addresses from the Office of Environment Chief Executive and leading public sector agencies, including the Australian Defence Force
- A showcase of new knowledge from the NSW Adaptation Research Hub, featuring prominent researchers, practical applications and interactive displays

- A marketplace to meet and discuss emerging research and tools to help NSW respond to climate change.

Are you interested in attending the AdaptNSW Annual Forum? Please [contact us](#) for more information.

## **Intergovernmental Panel on Climate Change (IPCC) new report**

The world's body of leading climate scientists – the Intergovernmental Panel on Climate Change (IPCC) - has released a new report on the impacts of both a 1.5 and 2 degrees Celsius increase in global average temperatures above pre-industrial levels, and on actions needed to avoid exceeding those temperature limitation goals.

The report draws on a broad base of peer-reviewed scientific literature, providing the most up to date synthesis of climate change science across the globe. It received intensive reviews by both experts and scientists, and was approved line-by-line by government representatives at a meeting in Incheon, South Korea in early October. The report makes clear that, current collective pledges are not sufficient to meet the goal outlined in the Paris Climate Agreement.

The Australian Knowledge Innovation Community (KIC) along with leading researchers, NGOs and scientists have prepared a short summary of what this report means in the Australian context. [The summary is available here.](#)

## **World experiences climate extremes**

- [The Climate Council – Australian drought 2018 and climate change \(PDF 5.1MB\)](#)
- [Wildfires in the arctic circle](#)
- [Scientists see fingerprints of climate change in Californian wildfires](#)
- [Satellite pictures show a record heat wave turning Britain from green to brown](#)
- [Sweden heatwave: hottest July in \(at least\) 260 years](#)
- [Quebec says up to 70 people may have died in connection with heat wave](#)
- [Texas power use to break record on Monday during heat wave: ERCOT](#)
- [Summer of extreme temperatures continues, to the beat of climate change](#)
- [Climate change is disrupting the planet's seasons](#)

## **Climate of the Nation**

A recent survey report, [Climate of the Nation 2018](#), found that more Australians accept the reality of climate change than at almost any time since this longitudinal survey began in 2007. The survey shows that three quarters (76 per cent, up from 71 per cent in 2017) of Australians accept that climate change is occurring, 11 per cent do not think that climate change is occurring and 13 per cent are unsure.

The survey reveals that Australian's concern about the impacts of climate change is growing and that they want to see Australia play a leading role in tackling climate change.

It is the effects of heat that are the driving concern about the impact of climate change, and people were most concerned about more droughts and flooding affecting crop production and food supply (78 percent), destruction of the Great Barrier Reef (77 percent) and more bushfires (76 percent).

## Regulators Turn up the Heat on Climate Risk Disclosure

On September 20, the Australian Securities & Investments Committee (ASIC) released Report 593 Climate risk disclosure by Australia's listed companies, which found only 17 percent identified climate risk as material to their business. ASIC has encouraged listed companies to:

- Adopt a proactive approach to emerging risks, including climate risk;
- Develop and maintain strong and effective corporate governance which helps in identifying, assessing and managing risks;
- Consider how best to comply with the law where it requires disclosure of material risks; and
- Disclose meaningful and useful climate change risk related information to investors—the voluntary framework developed by the Taskforce on Climate-related Financial Disclosures (TCFD) can assist in this regard.

The Investor Group on Climate Change (IGCC) welcomed the report saying *“Financial regulators are clearly telling corporate Australia that they must report on climate change risk with the same level of rigour as any other financial risk. This report finds that currently they are not”*, said Emma Herd, CEO of the Investor Group on Climate Change. *“Australian companies must lift their game when it comes to reporting on climate change risks, or they risk losing access to capital”*.

## Future Climate Leaders

[UNICEF's Youth Power the Planet](#) event celebrated the children and youth who are taking climate action and a panel of young people discussed how they have each applied their passions and skills toward climate action. Some examples include:

- winner of the UNICEF Comic Climate contest, Sona Sridhar from Chennai launched a full length comic book, [TRe: the Adventures of Brother Earth](#)
- 12 year old Gitanjali invented a way to detect contaminated water “faster and cheaper than existing technology”
- murals of endangered species that stand 8-meters tall with the aim “to strike home the message that these animals are very intricately linked with us and by losing them we are going to lose a part of ourselves”
- An invention to provide a sustainable energy source for the local community in Bosnia that is powered by chicken feathers

- Use of art and code to raise awareness of climate issues in New York City
- An original spoken word poem about the human impacts of climate change.

## New guidance to address climate impacts on community assets

Supported through a Building Resilience to Climate Change grant, the Institute of Public Works Engineering Australasia (IPWEA) has collaborated with Northern Beaches Council to publish a guidance document to help reduce the financial, social and environmental costs of climate change to the community.

Authored by highly respected climate scientist Dr Jacqueline Balston, *Practice Note 12.1: Climate Change Impacts on the Useful Life of Infrastructure* (PN12.1) proposes alternate and resilient designs in response to impacts such as rising sea levels and increased extreme weather events for assets like community facilities, roads and stormwater outlets. It includes a case study of the Fairy Bower amenities building which was destroyed in the June 2016 storm and designed and rebuilt to be more climate resilient.



### Asset Management and Financial Management Guidelines CLIMATE CHANGE IMPACTS ON THE USEFUL LIFE OF INFRASTRUCTURE

Practice Note 12.1  
An Addendum to Practice Note 12 - Useful life of Infrastructure  
NAMS Council



This fantastic resource was recently recognised at the Keep Australia Beautiful Awards. The Northern Beaches Council took out the **Response to Climate Change Award, among a slew of other prizes**. To share and build knowledge on Building Resilience into Infrastructure Assets, IPWEA will be offering training on the application of the practice note in November. [Visit the IPWEA website to register](#). For more information please contact [admin@ipwea.org](mailto:admin@ipwea.org). [Free digital copies](#) of PN12.1 are available for NSW councils.

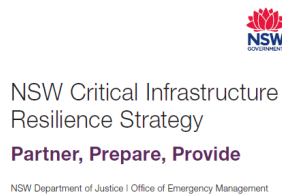
## Climate change challenges for infrastructure and settlements

Climate change is increasingly impacting the delivery and maintenance of essential infrastructure across Australia, a parliamentary inquiry has heard. In its report into [current and future impacts of climate change on housing, buildings and infrastructure](#), the Senate Committee on Environment and Communications highlights the possibility of essential assets having shorter lifespans and significantly greater maintenance costs.

Local Government representatives noted “and infrastructure designed today must be designed and managed for future climate change,” and emphasised the need for long-term decision making and planning to account for the risks arising from climate change. In a joint submission, a group of engineers and scientists noted that water-focused infrastructure assets such as reservoirs, flood-relief installations and drains have historically been designed with records of previous rainfall but that “in recent decades, rainfall has been considerably more variable in its amount and characteristics.” Higher temperatures and increases in periods of successive very hot days will also increasingly stretch electricity networks, according to evidence to the inquiry.

Over 65 submissions to the enquiry were received, and a series of public hearing conducted, however there were no recommendations to the report agreed by the Committee.

## Critical Infrastructure Resilience Strategy



The NSW Government in consultation with a range of government departments, local government, state owned and private infrastructure providers have developed the NSW Critical Infrastructure Resilience Strategy 2018 (pdf).

The development of this state-wide resilience strategy was led by the Office of Emergency management in the NSW Department of Justice, and is designed to address shared responsibility for critical infrastructure resilience, preparation for all threats and hazards, including climate change impacts, and provision of critical infrastructure services with minimal interruptions, even in emergencies.

## North Coast Enabling Regional Adaptation

OEH has commenced the North Coast Enabling Regional Adaptation (NERA) project with a series of workshops in Goonellabah, Ballina and Coffs Harbour. This project builds on local knowledge to understand climate vulnerabilities and identify opportunities to respond in the North Coast region of NSW. Over 90 regional decision-makers across various fields were involved, including local government, Local Health District, North Coast Local Land Services, Department of Primary Industries, Department of Education, Aboriginal Affairs, State Emergency Service, Public Works, NSW Ambulance, Family and Community services, TAFE NSW, Marine Parks Authority, Crown Lands, Regional Development Australia Roads and Maritime Services, Department of Planning and OEH. A final report will be released in early 2019.

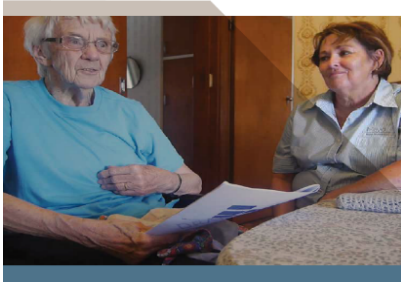


Image: Adaptive Communities Research Lead, Brent Jacobs, conducts NERA engagement activities

## Adapting the Marine Estate

In August the Government released the Marine Estate Management Strategy, supported by an investment of \$45.7 million for the first two years of implementation. The Strategy includes nine initiatives to address the main threats to the marine estate. OEH, the Department of Primary Industries (Fisheries), Transport for NSW and the Department of Planning and Environment will work in partnership to implement the Strategy.

The Strategy will be implemented in stages. Work will commence immediately to address water pollution, loss of coastal habitats, marine litter and loss of biodiversity. OEH will lead three initiatives: improving water quality and reducing litter, planning for climate change, and reducing impacts on threatened and protected species. This is the result of strong collaboration, both within OEH and across many NSW Government agencies. [Read the Marine Estate Management Strategy.](#)



#### Person-Centred Emergency Preparedness (PCEP)

A Process Tool and Framework for Enabling Disaster Preparedness with People with Chronic Health Conditions and Disability

[USER GUIDE](#)



### Community resilience advances

The Community Resilience Innovation Program (CRIP) is funded by the New South Wales and Commonwealth Governments through the National Partnership Agreement on Natural Disaster Resilience. It supports a broad range of community-led projects designed to increase all-hazard disaster preparedness and build community capacity and resilience.

Wingecarribee Shire Council has recently received funding under the Program to build extreme weather resilience in seniors, which is a very exciting project.

Another exciting project, the **Person Centred Emergency Preparedness tool**, has also recently been launched, and is designed for use by community health and disability providers to improve emergency preparedness for people with chronic health conditions and disability. [Check out the great videos that accompany the user guide here.](#)

### News from the Nodes...

#### Biodiversity Node: Roadshow Success

*How can we conserve species on the move?*

*How can we conserve species from the impacts of climate change?!*



Avid Biodiversity Node show participants in Armidale

Thanks to everyone who jumped onboard Macquarie University's unstoppable Node Show, which delivered the latest research and presented new methods and web tools to support adaptation planning for species and ecosystems across the state. Over 220 natural resource managers, decision-makers, scientists and conservation practitioners from a range of sectors attended the seven workshops and engaged with the Node's leading adaptation researchers and other practitioners. There was great interest in some of the emerging tools such as the new [Climate Refugia locator](#).

### **Adaptive Communities Node**

In partnership with [Climate KIC-Australia](#) and the [Banksia Foundation](#), the Adaptive Communities Node facilitated the [Banksia Ignite](#) session at the Museum of Contemporary Art as part of the Sydney Ideas Program. The Adaptive Communities Node curated virtual reality content from [Blue Trot](#), in addition to highlighting findings of the node's urban heat project in Leichardt and the Climate Adapted People Shelter 360 Tour. In collaboration with Climate Risk, the Node also demonstrated the NARClIM data in virtual reality, by taking real data and running real climate scenarios in a virtual world. [Check out](#) Adaptive Communities Node researcher, Dr Rebecca Cunningham, engaging stakeholders in climate change adaptation and mitigation responses, and helping to catalyse action. [Watch the Youtube clip here](#).

### **Coastal Processes and Responses Node**

Two valuable resources from Coastal Node partner, the Water Research Laboratory of the School of Civil and Environment Engineering, UNSW have now been incorporated onto the [NSW Coastal management toolkit](#), which is an OEH webpage which provides technical information to help councils meet the requirements of the [Coastal Management Act 2016](#), the State Environmental Planning Policy (Coastal Management) 2018 and the coastal management manual.

Node resources that councils may find useful in preparing and implementing a coastal management program (CMP) include:

- **Guidelines for seawall adaptation – Science and Synthesis report** which investigates the effectiveness of retrofitting existing rock and concreted coastal structures with additional (and more stable) primary armour. These guidelines provide information to help decision makers using a risk-based approach to optimise upgrades for existing structures and to design for staged construction of new seawalls that are resilient and adaptive to changing conditions. [www.environment.nsw.gov.au/research-and-publications/publications-search/guidelines-for-seawall-adaptation](http://www.environment.nsw.gov.au/research-and-publications/publications-search/guidelines-for-seawall-adaptation)
- **Guidelines for sand nourishment – Science and Synthesis report** which provides guidance on artificial emplacement of sand (or coarser material) to improve beach amenity and/or increase protection for backshore assets. It may be a standalone measure for protection, or be used to improve the beach amenity in combination with other adaptation measures such as a seawall. [www.environment.nsw.gov.au/research-and-publications/publications-search/sand-nourishment-guidelines](http://www.environment.nsw.gov.au/research-and-publications/publications-search/sand-nourishment-guidelines)

## Human Health and Social Impacts

The 13<sup>th</sup> Mosquito Control Association of Australia conference was held at Kingscliff, NSW, in early September for the first time in over a decade. It provided an opportunity to showcase research undertaken with Tweed Shire Council to address the threat of exotic mosquitoes in northern NSW. Supported by a 'Building Resilience to Climate Change' grant in 2017, Tweed partnered with Medical Entomology (NSW Health Pathology & University of Sydney) to develop a strategic plan to respond to the threat of exotic mosquitoes.



Dr Cameron Webb with Mavis the Mozzie, and some North Coast potential mozzie breeding sites

### Dr Cameron Webb with Mavis the Mozzie, and some North Coast potential mozzie breeding sites

Human Health and Social Impacts Node researchers trialled novel mosquito surveillance approaches that proved effective for monitoring mosquito populations but also were supported



by the local community, providing a pathway for future citizen science based mosquito projects in the future. This work was presented at the conference by Dr Cameron Webb on behalf of all stakeholders and received considerable interest given this is the first time such a capacity building project was undertaken in NSW.

Congratulations also go to Lily Hospers, a PhD student in the Thermal Ergonomics Laboratory at The University of Sydney under the supervision of A/Prof Ollie Jay, and funded by the OEH Human Health and Social Impacts Node was the recipient of a “Best student oral presentation prize” at the 7th Physiology & Pharmacology of Temperature Regulation meeting in Spilt, Croatia.

## Conferences

### Cooling Sydney Hack, 12 December 2018

This event will take place at One Parramatta Square (1PSQ), Parramatta on 12 December 2018. Cooling Sydney Hack will feature panel discussions with relevant Sydney stakeholders, breakout activities, networking opportunities and a fast-paced ‘Hack’ where selected EMCRs will have the opportunity to communicate the core of their collaborative research for the chance to win one of two seed grants. Each grant will be up to \$20,000.



### 12<sup>th</sup> Australasian Plant Conservation

Conference, CSIRO Canberra, 11-15 November

2018 will address ‘*Moving house – a new age for plant translocation and restoration*’, focusing on

translocation of native plants, especially those

threatened by many issues including climate change. To coincide with the release of the [third edition of the ANPC’s Threatened Plant Translocation Guidelines](#), APCC12 will bring conservation researchers and practitioners together to discuss the recent advances and latest scientific findings in plant translocation across Australia for successful threatened plant translocations. Species translocations have been an important conservation approach for more than two decades across Australia to save threatened species from extinction. With no foreseeable reduction in threats from climate change, urban and agricultural expansion and intensification, and invasive pests and diseases, translocations will be increasingly important into the future <http://www.anpc.asn.au/conferences/2018>.

**Public Health Association of Australia, Food Futures Conference** , 20 -21 November 2018, Brisbane, Australia. <https://www.phaa.net.au/events/event/food-futures-conference-2018>

**The First Global Forum for Heat and Health** , 17-20 December 2018, Hong Kong  
<http://ghhin.org/ghhin-forum-info>

**AMOS conference 11-14 June 2019** , Darwin. Enquires to [amos2019@amos.org.au](mailto:amos2019@amos.org.au)  
<https://amos2019.org.au>

**Climate Update 2019, hosted by ANU and the Australian Museum on 21 February 2019**

Part 1 will summarise the latest climate research, including a snapshot of newly released data on how our climate changed in 2018, and a focus on fire and oceans.

Part 2 will discuss the economic benefits of acting to address climate change.

Keep your eyes on this page for further updates <http://climate.anu.edu.au/news-events/anu-climate-update-2018>

**ENDS**

**Biodiversity Node, led by Macquarie University**

<http://biodiversity.science.mq.edu.au/>

**Adaptive Communities Node, led by the Institute for Sustainable futures, UTS**

<https://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/climate-change/nsw>

**Coastal Processes and Responses Node, led by the Sydney Institute for Marine Science**

<http://sims.org.au/research/long-term-projects/oeh-coastal-processes-node/>

**Human Health and Social Impacts Node, led by Sydney University**

<http://sydney.edu.au/medicine/public-health/research/hhsi-node.php>

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