Phytogen March 2021

Earth Hour! and March edition of Phytogen

27 March 2021

Hello ASPS members,

Earth Hour is this weekend. More information in the March edition of Phytogen.

The March edition of Phytogen is available HERE.

March Phytogen 2021

26 March 2021

Welcome to Phytogen for March 2021.

On the Wednesday 17th March 2021, Australia's chief scientist Dr Cathy Foley spoke at the National Press Club. If you haven't watched this yet, I hope you can find time this weekend or over the Easter break. You can watch on:



The title of the talk was "What next for science and research in Australia?"

Here is an article by the ASPS Environmental and Ecophysiology: Global Change Representative Dr Georgia Koerber from the University of Adelaide. email: georgia.koerber@adelaide.edu.au

Last year, I decided to upskill. I have always been alright at statistics therefore I went for an online Masters in Data Science. This nice article by open universities describes up-skilling well. At the beginning of 2021, many universities are having increased demand for postgraduate courses such as 6 to 12 month certificates and masters offered online. There were government initiatives too for subsidised university courses so that we could upskill while working from our homes last year.

Even though, I don't think I had many more hours, I did feel niggling to attempt to get ahead of the curve as described in this Conversation article: What should we do with 1 billion hours of time? Australian's COVID-19 opportunity.



Below are slides from my presentation (online of course :)) of my python project. I had taken photos of the tree canopies from 2013 to 2019 and calculated the leaf area index (LAI). I aimed to explore if LAI related to normalised difference vegetation index (NDVI), enhanced vegetation index (EVI) calculated from satellite data I downloaded, and how much carbon dioxide the mallee forest was storing as carbon, the net ecosystem production (NEP) recorded by the Terrestrial Ecosystem Research Network (TERN) Calperum tower during the same time period. In the future, and probably not too much distant into the future; it will be much more powerful to monitor how forest canopies are tracking with NEP than having to carry out laborious field measurements and calculations of leaf area index. Later this year will be my next subject in python and I look forward to adding in data from other sites around Australia and maybe even sites from other countries.

Groundtruth of Calperum Ecosystem recovery after bushfire with Vegetation Indices









Constructing the data set

I found it very exciting to be able to delete blank rows with python. I would have struggled to take a lot of time to do this by hand in excel before starting to learn python

There were close to 35000 rows



Joining
the satellite indexes (EVI and NDVI) with LAI, giving times matches to compare with NEP, net ecosystem production

The lowest is at the ground Level recording the NEP. This is the net ecosystem production and is the amount of carbon dioxide the mallee forest is photosynthesizing. It is recorded from 2008 to 2016





Having a look online, there are also plenty of great opportunities to upskill in plant science, such as those written about in this article: [Agriculture degrees are having their moment in the sun.](#) The FAO is concerned about food demand in the future, which means those in the agriculture sector have a pivotal role to play in the production of food (FAO, 2017).



Here I am with my tutorial group and my tutor Dr Kane (c from the University of Adelaide (online of course © 25th March 2021).



Tutoring 2nd year University students (good to be back on campus © 23rd March 2021). I wish you all the best for your studies in 2021 and beyond.

Reference: FAO. 2017. *The future of food and agriculture – Trends and challenges*. Rome. http://www.fao.org/3/i6583e/i6583e.pdf

Events

This weekend is Earth Hour.



ILEAPS - OzFlux

HOME SPEAKERS ABSTRACTS PROGRAMME SPONSORS & EXHIBITORS DESTINATION MEET THE COMMITTEE CONTACT US

NEW HYBRID CONFERENCE DATES ANNOUNCED

Tuesday 8 - Friday 11 February 2022



Distinguished Professor Graham Farquhar

Distinguished Professor, Australian National University, Research School of Biology

Professor Graham Farquhar has undertaken and led research across a broad range of fields and scales, from integration of photosynthesis with nitrogen and water use of plants, stomatal physiology, isotopic composition of plants and global change. He is a Fellow of The Australian Academy of Science and of the Royal Society and a Foreign Associate of the U.S. National Academy of Sciences. He has over 300 research publications and has received many awards for the research, including the Order of Australia (Officer (2015), the Work Prize for Nutrition (Silver), 2016) the Prime Minister's Prize for Science (2015) and the Kyoto Prize for Basic Sciences (2017). He was named 2018 Senior Australian of the Year for his contributions to world food security.

Graham is Distinguished Professor of the Australian National University's (ANU) Research School of Biology and a Chief Investigator of the Australian Research Council's Centre of Excellence for Translational Photosynthesis.



Distinguished Professor Belinda Medlyn

Western Sydney University, Hawkesbury Institute for the Environment

Belinda Medlyn is distinguished Professor of Ecosystem Modelling at the Hawkesbury Institute for the Environment, Western Sydney University. She is one of the world's leading ecosystem modellers, with over 25 years of experience in modelling responses of vegetation to environmental change. Her research work focuses on translating information from plant and ecosystem scale experiments to develop models predicting vegetation responses to elevated carbon dioxide, rising temperature and drought. She has been instrumental in international model intercomparison projects evaluating ecosystem models against Free-Air CO2 Enrichment (FACE) experiments, and leads model synthesis activities at the Eucalyptus FACE experiment in Western Sydney. Her research on stomatal conductance has drawn together the main strands of evidence about stomatal behaviour to develop a unified theory that now serves as the major framework for research in this area. Her work on drought mortality led her to establish the Dead Tree Detective citizen science project. She was a Clarivate Analytics Highly Cited Researcher in 2018-19, and in 2019 was the Australian Research Council Georgina Sweet Laureate Fellowship.



Professor Vic Arcus

University of Waikato

Vic Arcus is a professor of molecular biology at the University of Waikato. He has spent the last seven years developing Macromolecular Rate Theory (MMRT) to model the temperature dependence of biological rates at different scales - from enzymes to ecosystems, with some profound implications for the identity of global land carbon sinks. The MMRT project is now an international interdisciplinary project involving physicists

Science week is 14th – 22nd August 2021. ASPS have been awarded funding to run events.

Plant Science Safeguarding Our Future Food Security

Australian Society of Plant Scientists

By the middle of the century there will be almost 10 billion people on Earth – an awful lot of mouths to feed, especially when a warming climate makes agriculture more challenging. Scientists may save the day by helping crop species adapt and thrive as growing conditions change.

The Australian Society of Plant Scientists is organising visits to laboratories and field sites across the country. Through talks, displays and demonstrations they give rare insight into the challenges faced by farmers, and how food scientists are working to help.





Please also remember to encourage your colleagues and students to apply for ASPS society awards:

ASPS Education and Outreach Award

Applications for the ASPS Education and Outreach Award should be lodged with the Honorary Secretary, ASPS Inc. secretary@asps.org.au Applications for the 2021 ASPS Education and Outreach Award are now open. The closing date for the 2021 award is April 16th 2021.

RN Robertson Travelling Fellowship

Up to $4000 is available to award in 2021 to support domestic or international travel for an early career researcher to undertake a research visit outside their host institution. More than one award can be made if the total requested funds are less than $4000.

Applications for the R.N. Robertson Travelling Fellowship should be forwarded in electronic form to the Hon Secretary of ASPS (secretary@asps.org.au). Applications for the 2021 Fellowship are now open. The closing date is 16th April 2021. To be eligible for this fellowship round some fraction of the planned work must take place in 2021.

Please also make sure your ASPS membership is up to date and encourage your colleagues and students to join ASPS. Remember to tweet to @asps_ozplants if you have news and have upcoming events.





Plus… **save the date** for Thursday and Friday **25th and 26th November 2021** for our ASPS hybrid conference. Details soon.

National Eucalypt Day this Tuesday and GPC e-bulletin.

21 March 2021

ASPS members,

This Tuesday 23rd March is **National Eucalypt Day** and we would like to celebrate by sharing stories of our members' Eucalypt research via Twitter.

To participate, either tag us (@asps_ozplants) in a tweet on the day using the hashtag #NationalEucalyptDay or email Frances.Sussmilch@utas.edu.au in advance with an action shot with your study organism and something about you and your Eucalypt research in 280 characters or less. Include your university/workplace so we can tag them too.

The March GPC e-bulletin can be accessed HERE.

ASPS awards deadline extended to next Wednesday (24th March)!

21 March 2021

Dear ASPS Members,

The closing dates for the two major ASPS awards has been extended until Wednesday 24th March 2021.

*These prestigious awards include the **Peter Goldacre** **Medal**, which is awarded for research contributions for early/mid-career researchers (male or female) within 10 years of their PhD, and the **Jan Anderson** **Award**, which specifically recognises the significant contribution of mid-career female researchers.*

For further information about the applications please see these links:

www.asps.org.au/awards/peter-goldacre-award

www.asps.org.au/awards/jan-anderson-award-and-lecture

Nominations for these awards should be sent to secretary@asps.org.au by midnight 24 March 2021.

Cheers,

Simon Williams

ASPS Honorary Secretary

ASPS awards closing this Friday!

17 March 2021

Dear ASPS Members,

A final reminder that the closing dates for the two major ASPS awards is Friday 19 March 2021.

These prestigious awards include the **Peter Goldacre** **Medal**, which is awarded for research contributions for early/mid-career researchers (male or female) within 10 years of their PhD, and the **Jan Anderson** **Award**, which specifically recognises the significant contribution of mid-career female researchers.

For further information about the applications please see these links:

www.asps.org.au/awards/peter-goldacre-award

www.asps.org.au/awards/jan-anderson-award-and-lecture

Nominations for these awards should be sent to secretary@asps.org.au by midnight 19 March 2021. Contact Simon Williams (Secretary) or myself if you have any questions.

Thanks, Peter Ryan

Dr Peter R Ryan

President, Australian Society of Plant Scientists

Honorary Fellow, CSIRO Agriculture and Food

PO Box 1700

Canberra ACT 2601, Australia

Closing date for ASPS Award applications

02 March 2021

Dear ASPS Members,

I would like to remind you all that the Australian Society of Plant Scientists is now accepting nominations for its two major awards. These are the **Peter Goldacre** **Medal**, which is awarded for research contributions for early/mid-career researchers (male or female) within 10 years of their PhD, and the **Jan Anderson** **Award**, which specifically recognises the significant contribution of mid-career female researchers.

These are prestigious awards and we invite eligible candidates to either submit applications themselves or encourage their lab members and colleagues to apply for them.

For further information about the applications please see these links:

www.asps.org.au/awards/peter-goldacre-award

www.asps.org.au/awards/jan-anderson-award-and-lecture

Nominations should be sent to secretary@asps.org.au by 19th of March 2021. Contact any of the executive if you have any questions.

Many thanks, Peter Ryan

Dr Peter R Ryan

President, Australian Society of Plant Scientists

Honorary Fellow, CSIRO Agriculture and Food

PO Box 1700

Canberra ACT 2601, Australia