

# The Forest Findings

Edition Three March 2017



Centre Square, Marrakech

## Young Foresters Attend COP 22, Morocco

By Charlotte Ross-Harris

IFSA had the opportunity to send a team of delegates to the UNFCCC COP 22 (United Nations Framework Convention on Climate Change Conference of Parties 22) in Marrakech, Morocco. IFSA is the International Forestry Students Association - a student-run NGO that unites forestry students from around the globe both through media and regional, global and strategic meetings. The IFSA delegation was awarded eight observer passes, spread over the course of two weeks. It was exciting to arrive in the bustling city comprised of small alleyways full of motorbikes, donkeys and horses, alongside countless markets and busy locals. On the city's edge lay the COP22 Village where we arrived on day one as the opening Plenary Session was commencing. We joined the back of the tent to hear the opening speech from Ségolène Royal, last year's French COP President. She laid down the premise of this meeting – action and progress for the Paris

Agreement with a focus on one of the most affected and under-prepared regions, Africa. The hand over to this year's Moroccan President, H.E. Salaheddine Mezouar, saw a call to be more ambitious in our negotiations and actions. He addressed the need to focus on the most vulnerable populations in order to move forward as a whole. An African proverb rang true: The sun does not ignore a village just because it is small. Whilst this early entry into the Paris Agreement is hugely positive and encouraging, it is clear that the path forward is not easy and much will be held in the follow through of our words post-COP.

The importance of this theme became clear as we visited the exhibits and side events throughout the day. The continent of Africa is responsible for just 4% of the world's Greenhouse Gas emissions, yet it contains six of the ten most severely affected

countries. Already there are 10 million climate refugees in Africa and 65% of the population is affected by climate change. These sobering facts left me marvelling yet again at the inequalities of this world. However defeating, the atmosphere was filled with optimism and positivity. The exhibits throughout the village displayed the ideas and progresses of different nations and independent groups. These were showcasing everything from the newest electric vehicles and models of solar panel farms, to pro-nuclear power arguments and technology used to pull water out of the air for drinking.

Aside from these exhibits and the high level negotiations going on in the next tent, there were many diverse side events to attend. These discussions were held by a great range of stakeholders including politicians, scientists, youth groups, indigenous tribespeople, government bodies, various NGO's and the United Nations themselves. The IFSA delegation spread themselves around these events listening in on many topics regarding climate change and how to advance this Paris Agreement forward. Whilst I cannot relay all our findings here you can read more on the IFSA blog which is accessible here:

<https://blogifsa.wordpress.com/category/cop-22/>

Throughout the week it became evident that the whole world is changing and moving towards a greener direction. This is heavily aided by the fact it is becoming financially beneficial to do so. Much of this stems from big investors that are demanding sustainably labelled businesses to invest in. For example, the Norwegian Government Pension Fund,

the world's largest sovereign wealth fund, is channelling its investments into green infrastructure projects. This is both for ethical reasons and as they believe they can produce the same profitability as from other investments. Furthermore, these investments will only flourish further into the future. The private sector too is changing the supply chain structure to include more sustainable business practices, due to customer demand. Big impacts are coming from companies with huge buying power that are committing to choosing sustainable or deforestation free products. For example, McDonalds has committed to buying deforestation free beef. Therefore, we need sustainable supply chains and green business practices for these companies to invest in.

In terms of forestry at COP, the focus was largely centred around developing countries. This was demonstrated through action on REDD+. Different nations shared their experiences and progresses in respect to their applications and involvement in REDD+ trials. Exciting developments in satellite imagery and the applications of this technology in forestry were also displayed. Especially in regard to forest monitoring and reporting which can be more easily and swiftly performed, and where



Sunset over the COP Village, Morocco.

transparency of results is facilitated. Additionally, there was a strong presence from indigenous groups presenting evidence around their demonstrated long-term ability to care for and sustainably manage forests. Indigenous representatives from around the globe presented data showing that the locations of their lands contain healthier, more carbon rich forests than those outside of these lands.

The ability to attend this event as a member of the youth was invaluable. Currently 50% of the global population is comprised of youth. Yet there are very few opportunities for young members of society to impact on decision making. The youth of this world are the engines of social change, and I heard from some really powerful young people throughout the week with inspiring tales of groups spreading awareness around climate change. The youth at COP were

energized and ambitious. And it is no wonder why – not only do we inherit the problem, we inherit the solutions too. The impassioned and deeply inspiring speeches, made by young and old over youth and future generations day, all sang the same message: we must ensure the youth are involved in the decision making process. The negotiations must include all involved demographics; and despite being young and relatively inexperienced, the youth are qualified to make decisions – it is about the capacity of the person, not their age. Some advice I noted down throughout the day: Make noise. Do not be assured with promises. Demand results.

Over all the experience was hugely enlightening. It both provided insight into global policy development as well as much food for thought as we progress further towards adaptation to a warming planet.

## Why Be A Forester?

At the moment there is a great competition running to promote the many excellent reasons to be a Forester!

### What you can win:

First prize is a ticket to the Institute of Foresters Australia Conference 2017 held in the beautiful city of Cairns in Far North Queensland, which also includes a \$500 travel/accommodation voucher from Flight Centre.

Runner up prize is a Fitbit Blaze 'Smart Fitness Watch' to help you keep fit and more (retail \$300).

In addition, the first 10 entries submitted will receive a \$20 Coles Myer voucher

### What to do?

It's simple, to showcase your career all you need to do is make a video that addresses the following questions:

"Why be a forester?"

"What inspired you to become a forester?"

"What does a forester do?"

For more information visit: <http://ecosystemforest.unimelb.edu.au/engage/industry/why-be-a-forester-video-competition>

Applications close 31st March 2017

# Subject Review...

## Forest Ecosystems (FRST90015)

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By Kirsten Langmaid

Forest Ecosystems is aimed to be the first subject of the Forest Ecosystem Science Master's program, providing an intro to everything. You will spend 5 days total in the field, discovering different ecosystems and learning basic field skills, and then the rest of the time at Creswick learning the theory behind the subject. The topics covered ranged from ecosystem basics, Australian forest types and species, fire, soils, carbon cycle and Net Primary Productivity calculations for the final assessment task. Chris and Luba take the time to make every student (irrespective of the discipline or education levels) enjoy the trip, and due to the lengthy field trips you really get to know your fellow students on the bus!

To get the most out of this subject I would recommend:

- To do it in your first year of the Masters
- Do the readings beforehand, it will enable you to get the most out of the trip
- Don't be afraid to ask for help when dealing with the calculations
- Bring long pants and boots for the field! You will be going into leech territory :)



## Bushfire & Climate

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By Jamie Burton

Bushfire and climate ran from 13<sup>th</sup> to 24<sup>th</sup> of February at Creswick. It is coordinated by Dr Trent Penman. The first week was spent learning about the fundamentals of forest fire behaviour and how it is influenced by fuels, weather, topography and climate. This was complemented by several afternoon practicals, one of which we got to burn things and explore how different fuel types, loads and arrangements affect flame height and fire spread. We also had two field trips to the forests around Creswick, learning about how to use the overall fuel hazard assessment guide and conduct measurements to assess forest flammability. In the second week we learnt about different fire prediction methods, prescribed burning tactics and fire suppression strategies. We used manual methods and computer modelling tools such as Phoenix Rapidfire to predict the spread of a fire.

This subject was excellently taught and had a good balance of lectures and practical learning. It is a great subject for those who have a burning interest in bushfire behaviour and prediction.



# Urban Tree Health (HORT90044)

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By Karena Hui

Sitting under the 100 year-old English Oak tree in the heritage gardens, I felt enjoyment to be in such beautiful green landscapes and warm sunshine. This sounds good, right? I am glad to tell you where it is; the University of Melbourne's Burnley campus, and that's what I usually did during the interims of Urban Tree Health (HORT90044).



When you look through the windows of your home, the percentage of seeing an urban tree is quite high and it is more than likely that you will see more than one. This subject covers the areas of entomology and pathology of trees in an urban environment, including the life cycle of insects and pathogens. It

also looks at a wide range of management strategies for trees in urban settings, particularly within parks and open spaces, and the channel of communication with other relevant stakeholders for effective implementation.

Through laboratory experiments, we were taught to identify the signs and symptoms of various tree diseases under microscopic analysis; in particular a pear baiting experiment, which is a method to determine the presence of the pathogen, *Phytophthora*. In addition to this, we conducted fieldwork associated with insect pest trapping, while also learning a variety of insect species and their impact on our environment.

Now it's your turn to look around at the trees near you, and to see if there are any signs of unhealthy trees; don't forget to report anything unusual to your local Council. This could greatly help to reduce the potential spread of problematic insects or diseases which may give rise to a devastated loss of urban trees.

## Agroforestry Farm Tours

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Source: [agroforestry.net.au](http://agroforestry.net.au)

Rowan Reid (who also runs the excellent Uni of Melbourne's Agroforestry subject) is celebrating 30 years of agroforestry on his farm in Yan Yan Gurt West, Victoria. In order of this milestone he is running guided farm tours on the following dates:

- Friday 21st April: 10am - 12.30pm (followed by an optional afternoon tour of the Stewart's Yan Yan Gurt West Farm )
- Sunday 21st May: 10am - 12.30pm (followed by an optional afternoon tour of the Stewart's Yan Yan Gurt West Farm)

For more information or to book visit: [agroforestry.net.au](http://agroforestry.net.au)

# Research Insight: Internal Tree Decay & Carbon Loss

By Cristina Serrano

My name is Cristina Serrano and I am a graduate student from the master of Forest Ecosystem Sciences from the University of Melbourne. Last year, I had the great opportunity to conduct a research project in the southeastern temperate forests of the Central Highlands in Victoria. My research project focused on modelling tree internal decay and cavity development in these forests to reduce uncertainties in large tree carbon estimates. Particularly, tree internal decomposition in *Eucalyptus regnans* and *Nothofagus cunninghamii*. In a climate change context, these southeastern temperate forests are particularly important due to their great carbon biomass density which can contain more carbon per unit than tropical rainforests. It is well-known that the levels of CO<sub>2</sub> have been increasing globally. Countries worldwide participate in climate change initiatives to assess their contribution to global warming and create new mechanism to control CO<sub>2</sub> levels in the atmosphere. In this context, assessing the potential of carbon storage in terrestrial ecosystem has gained important attention. Trees store carbon naturally in their tissues. It is logical to think that large trees will storage a great amount of carbon. However, trees also decay, especially large trees. Carbon sequestration studies have mainly focused on the living organic matter

such as the biomass of trees, like branches, leave, roots, etc. But also in dead organic matter such as dead branches, dead stems and dead litter commonly accumulated on the forest soil. In general, internal decay has received little attention as a potential influential element in the possible loss of carbon sequestration in trees. Although we know that decay is an important natural element of trees, we know very little about the development of internal decomposition and less about the impact of internal decay in carbon sequestration.

We selected forty-four trees of these two large tree

**Do you wonder what internal decomposition, cavities or carbon loss looks like?**



**Figure 6** Dead cavitied trunk of *N. cunninghamii* (A) and *E. regnans* (B) at the Central Highland of Victoria (Photo: Cristina Serrano).

species and we drilled them using a Resistograph device. We evaluate the possible location of internal decay, the intensity of the decay and we could also calculate the sizes and volume using not only the Resistograph but also the CODIT model. Using the information from the trees, we were able to determine the probability of internal decomposition based on tree diameter and other environmental conditions. Our results suggest that while there is a strong relationship between cavity and diameter, other decay states such as early and advanced decay was more variable across tree diameter in both species. However, the internal decay present in *E. regnans* was highly variable across diameter distribution than *N. cunninghamii*. There was a high probability

that *N. cunninghamii* develops internal cavities when diameter increases. Compared to other studies which have suggested that at least 50% of the total biomass of *E. regnans* is lost when trees reach 50cm dbh. In opposition to these claims, our findings suggest a slight decrease effectively occurred when *E. regnans* reach around 100cm dbh but did not compromise 50% of the total biomass. Our results are just the first step to assess internal decomposition in these forests. Other devices can be used to improve our calculations and enhance our investigation to understand the impact of the decomposition in these large, absolutely stunning and valuable trees.



Cristina Serrano in the field.



Using a resistograph device (photo source: C.Serrano)

# Upcoming Conferences & Scholarships

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## **Nature Conservation Council's 2017 Bushfire Conference**

30-31 May 2017 - Sydney, NSW

<https://www.nature.org.au/healthy-ecosystems/bushfire-program/>

## **Commonwealth Forestry Conference**

3-7 Apr 2017 - Dehradun, India

<http://www.cfc2017.in/>

## **Tropical Forestry: Innovation & Change in the Asia Pacific Region**

14-17 August 2017 - Cairns, Australia

<http://www.ifa.consec.com.au/>

## **IAWF Scholarship x 2**

Upto \$3000 USD available for graduate level students studying in fire related fields.

<http://www.iawfonline.org/scholarships.php>

### Comments?

Feel something is missing?

Please email any comments, questions, queries or anything you would like to add to the next edition to:

[t.sutcliffe@unimelb.student.edu.au](mailto:t.sutcliffe@unimelb.student.edu.au)

# Job and Volunteer Opportunities

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## **Fire Management Officer x 2**

Department of Environment, Water and Natural Resources - Adelaide, SA.

<http://nrmjobs.com.au/search?g=9994663>

## **Forester**

SFM Forest Products - Green Triangle

[http://www.fridayoffcuts.com/dsp\\_ads.cfm?type=Jobs#6](http://www.fridayoffcuts.com/dsp_ads.cfm?type=Jobs#6)

## **Graduate Ecologist x 2**

Eco Logical Australia - Mudgee & Armidale

<http://nrmjobs.com.au/search?g=10004962>

**Don't forget to  
celebrate!**



THE UNIVERSITY OF  
MELBOURNE

# 21 March International Day of Forests