



CARBON NEWS

Issue 2

Welcome to our April edition

Climate change is in the spotlight at the moment with the release of the latest IPCC report and the release of the White Paper that details the Governments Direct Action Plan Emissions Reduction FUND. It is becoming more and more important for farmers to have opportunities to adapt to climate changes and contribute to mitigation efforts. Since our last issue of "Carbon News" in January findings from the Climate Change Research Program have been distributed and there have been some exciting results come from carbon farming research projects based in the West Australian wheatbelt. In this issue we attempt to give you a taste of these things and give you the opportunity to seek out more information online or at some upcoming events!

Contributions to 'Carbon News'

In this issue, we have some fantastic contributions from researchers in Western Australia. If you would like to contribute to our next issue please feel free to get in contact with me at nikki.dumbrell@wantfa.com.au

Thanks and I hope you enjoy the newsletter,
Nikki Dumbrell
WANTFA Carbon Farming Project Officer

Global emissions from agriculture have been increasing!

Agriculture's greenhouse gas emissions continue to rise – although not as fast as emissions from other human activities. From 2001 to 2010 the average emissions of carbon dioxide equivalents to the atmosphere from crop and/or livestock farm systems was 5 billion tonnes per year! The annual emissions of greenhouse gases from agriculture have increased over the last 50 years. You can see the comparison between the emissions from Australian agriculture to that in other countries and crop systems to other agricultural systems here: www.fao.org/resources/infographics/infographics-details/en/c/218650/

Upcoming Events

7-9 May
State NRM Conference
(Tipping Point
Conference)

Busselton

www.nrmconferencewa.com.au

13 May
Emissions Reduction
Fund White Paper
Seminar

Norton Rose and Fulbright
Level 39, 108 St Georges
Terrace, Perth

7:45 am - 9 am

RSVP to (08) 6212 3222

The carbon content of Australia's soils

CSIRO has developed a detailed map (resolution: 90 metres by 90 metres) of soil carbon stocks to 30 cm across Australia. It is the best baseline for soil organic carbon we have ever had for Australia. As a result of having an effective baseline, we can measure changes in soil carbon in response to land cover, climate, management and greenhouse gas offset activities.

The research findings that were used to create the map indicate that the average amount of organic carbon in the top 30 cm of Australian soil in 2010 was 29.7 tonnes per hectare and the total stock for the continent at 25.0 gigatonnes (Gt= 1000 million tonnes). The total stock in agricultural regions of Australia was 12.7 Gt with 95 per cent confidence of being within the range of 9.9 to 15.9 Gt. The stock of organic carbon in West Australian soils was estimated at 7.09 Gt.

Dr Viscarra Rossel is the lead author of the paper 'Baseline map of organic carbon in Australian soil' which is based on this research and has been published in Global Change Biology. Dr Rossel believes the map is very important and has many uses, "The maps of the estimates and their uncertainty are for 2010 and could be used to:

- set a baseline from which Australia's national soil carbon stocks could be monitored
- guide the design of national soil monitoring networks
- help guide future soil sampling designed to improve estimates of Australia's soil carbon stocks
- help to assess the potential of Australian soil to sequester carbon
- improve Australia's terrestrial carbon budgeting
- assist with strategies to mitigate and adapt to the effects of a changing climate."

28-29 May

Workshop for advisors in the livestock sector

Attendees can increase knowledge and skills in climate variability, greenhouse gas emissions, business profitability and sustainability

Pagoda Resort and Spa, Como

Workshops held by Farm300 (MLA) and Project 2020 (RIST)

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Project 2020

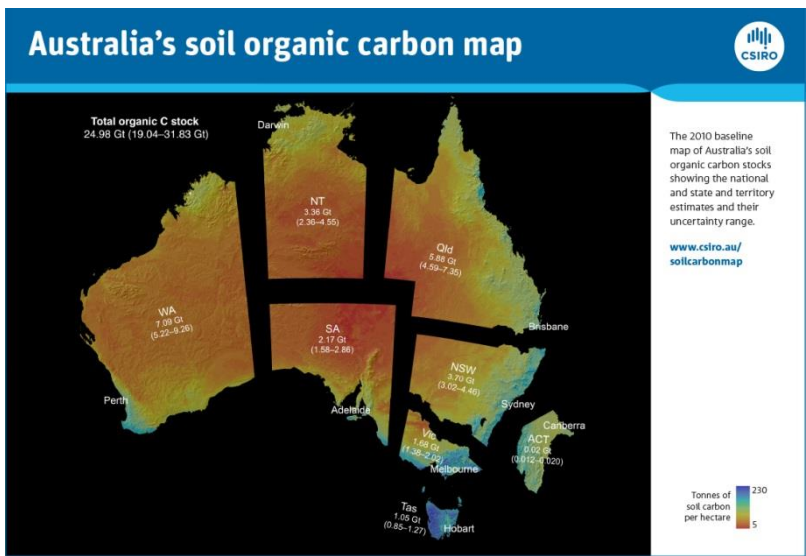
andrew.thompson@atconsulting.com.au

July (date to be confirmed)

Post Seeding field walk

Cunderdin





Measuring and reporting soil organic carbon

Liam Ryan, DAFWA

Soil organic matter is increasingly being recognised for its contribution to nutrient cycling, water retention, biological function and optimising crop growth. In addition the potential for soil to store carbon is viewed as a possible way of mitigating greenhouse gas emissions. Therefore it is becoming more and more important to accurately measure the impact of changes in organic carbon on the functional value of soil. For the full article and a step-by-step guide to measuring and calculating soil organic carbon go to: www.agric.wa.gov.au/soil-carbon/measuring-and-reporting-soil-organic-carbon

myCFI website

The myCFI website was launched in early March 2014. It is a resource that can assist farmers, land managers and other stakeholders across Australia to learn the details of the carbon farming policy framework in Australia and in particular, the Carbon Farming Initiative. The website has resources that can help you to plan and manage a carbon farming project. You can see what carbon farming and emissions management projects are underway in Australia and get in touch with people and organisations that can help!

The website also has a listing of the Department of Agriculture Carbon Farming Extension and Outreach projects, including the project we are running here at WANTFA.

Check it out here: www.mycfi.com.au

The WANTFA Extension and Outreach project details are listed on the website here: www.mycfi.com.au/extension-and-outreach/overcoming-barriers-for-wa-growers-to-participate-in-the-cfi/

Core carbon farming group meet in WA to discuss research and options for grain growers

On Friday 28 March 2014 WANTFA organised for a group of 20 researchers, industry professionals and extension providers all working on carbon farming to meet and discuss their current carbon farming related research and opportunities for collaboration on extension activities that target growers in WA.

The motivation to bring all of these people into one room was to discuss current research and strategies for communicating with growers and to ensure that WA growers receive the best and most up-to-date information about carbon farming and greenhouse gas emissions management in broadacre agriculture.

We plan to continue these meetings and to introduce a number of other activities and streams for communication within this group such that growers receive consistent messages and have access to the researchers working on many of the different aspects of carbon farming in Western Australia's wheatbelt. These meetings will be held six monthly for the duration of the WANTFA Extension and Outreach Project.

Further details of the meeting and a list of attendees is published on the WANTFA website at

www.wantfa.com.au/index.php?option=com_content&view=category&layout=blog&id=8&Itemid=142

Update on the Climate Change Research Program

Some of the key findings of the Australian Government's Climate Change Research Program (CCRP) have been published in a booklet titled "Australian agriculture: reducing emissions and adapting to a changing climate, key findings from the Climate Change Research Program". It is available at www.daff.gov.au/data/assets/pdf_file/0006/2359815/reducing-emissions-adapting-changing-climate.pdf

Highlights of the CCRP

- We have data to characterise nitrous oxide emissions from different soils, climates and farming systems and soils under different management
- Trials have demonstrated productivity gains and reductions in nitrous



oxide emissions as a result of improved nitrogen efficiency (through better technologies and management)

- We have a reasonable benchmark of soil carbon levels
- In a given region, soil carbon levels are generally higher under pasture than crop and generally higher in a high rainfall and/or lower temperature region.
- The major factors that influence soil carbon are rainfall and soil type
- Higher emissions of nitrous oxide are often observed in farming systems that have high soil carbon, high soil moisture and high nitrogen inputs
- Important advances have been made in the ease of measuring greenhouse gas emissions from livestock

Study reveals carbon potential of saline land

Mike Clarke, DAFWA

A study has revealed how much carbon can potentially be stored in salt tolerant trees and shrubs. The collaborative project between Department of Agriculture and Food (DAFWA), the Northern Agricultural Catchments Council (NACC) and the Forest Products Commission (FPC), is providing a greater understanding of the opportunities and threats that carbon farming may bring for salinity management.

Six sites have been studied on farms ranging from west of Three Springs to north of Perenjori and south to Pithara. All of the plantings were over 10 years old and on private property. Over 5000 trees and shrubs were measured and over 300 were destructively sampled weighed and samples dried to determine the carbon content. This has enabled equations to be developed that can estimate the biomass or carbon mass of the trees and shrubs from the diameter of a tree's trunk or from crown volume measurements of shrubs.

As well as sequestering carbon these sites are also providing other benefits such as rehabilitating degraded soils, providing habitat for wildlife and valuable fodder reserves for stock.





Alex Winter (FPC), Kim Brooksbank (DAFWA) and Callum Love (NACC) weighing tree branches as part of the project.

The plots will become long term monitoring sites for future measurements as the trees grow over time. The knowledge gained and information products developed from this project, will allow landholders, government and industry to make informed decisions on carbon farming our saline land. Operating funding for the project has been provided through the State Natural Resource Management Program.

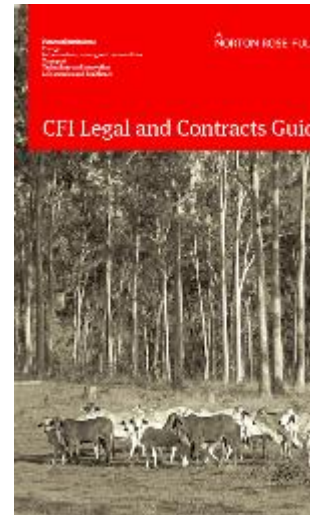
Detailed results from the study will be released soon. For more information contact Mike Clarke at the Department of Agriculture and Food Geraldton at mike.clarke@agric.wa.gov.au

CFI legal and contracts guide

If you are considering your eligibility for participation in the Carbon Farming Initiative or are looking for details of the methodology determinations for projects that are approved under the CFI you can refer to the "CFI Legal and Contracts Guide" developed by a team of lawyers from Norton Rose and Fulbright in Melbourne. The guide contains details of the CFI and the key considerations to think about when planning a project and entering the carbon market!

You can access the guide (4 MB) online at:

<http://www.nortonrosefulbright.com/files/cfi-legal-and-contracts-guide-111633.pdf>



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This newsletter is produced as a part of WANTFA's Extension and Outreach Project titled "Overcoming barriers for West Australian growers to participate in the Carbon Farming Initiative". This project is supported by funding from the Australian Governemnt.

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