

Blue Carbon, or the Carbon Blues?

Australia makes much of its support for 'blue carbon' initiatives, but their impact is tiny compared to Australia's emissions and coal exports.
Rod Campbell, November 2017

Introduction

'Blue carbon' refers to the carbon storage potential of coastal ecosystems such as mangroves, tidal marshes and seagrass beds. These ecosystems can sequester carbon at higher rates than many terrestrial ecosystems and also play an important role in biodiversity conservation, protecting coastlines and coastal economies.

Australia founded the International Partnership for Blue Carbon at the 2015 Paris climate talks. This partnership includes a range of governments and non-government organisations. Australia emphasises this as an important part of its climate work – an event on blue carbon is one of just three side events energy minister Josh Frydenberg will attend at the COP23 climate talks in Bonn.

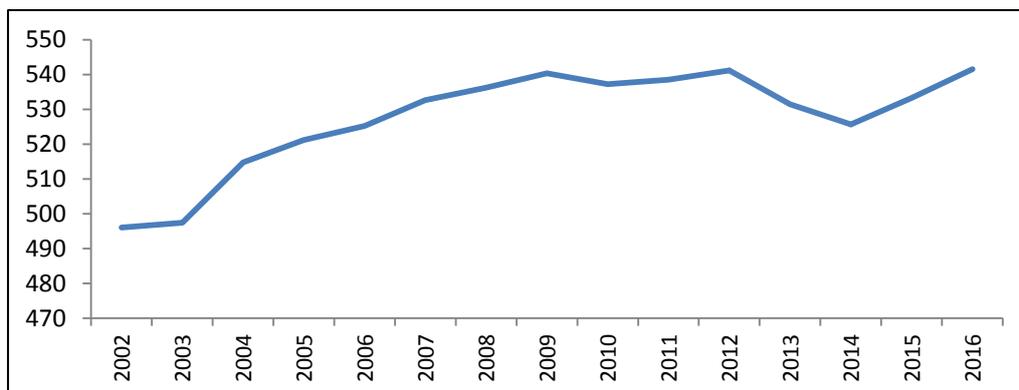
While efforts to protect coastal ecosystems are very important for biodiversity conservation, local economies and climate adaptation and mitigation, the carbon impact of Australia's initiative is minimal in the context of Australian climate issues.

Blue carbon in Australian context

Carbon emissions from mangrove deforestation are between 20 million and 120 million tonnes of carbon per year.¹ A rough conversion of carbon to carbon dioxide equivalent (CO₂e) can be obtained by multiplying tonnes of carbon by 3.76.² So all mangrove deforestation globally generates between 75 and 451 million tonnes CO₂e.

To put this in context, Australia's national emissions were 541 million tonnes in 2016. Australia's emissions have increased substantially in recent years, as shown in Figure 1 below:

Figure 1 – Australia's emissions excluding land use, land use change and forestry



Source: Quarterly Updates of Australia's National Greenhouse Gas Inventory, December 2016

¹ Donato et al (2011) *Mangroves among the most carbon-rich forests in the tropics*, <https://www.nature.com/articles/ngeo1123#ref-link-abstract-7>

² Romm (2008) *A factor of 3.67 makes a big difference when discussing climate*, <http://grist.org/article/the-biggest-source-of-mistakes-carbon-vs-carbon-dioxide/>

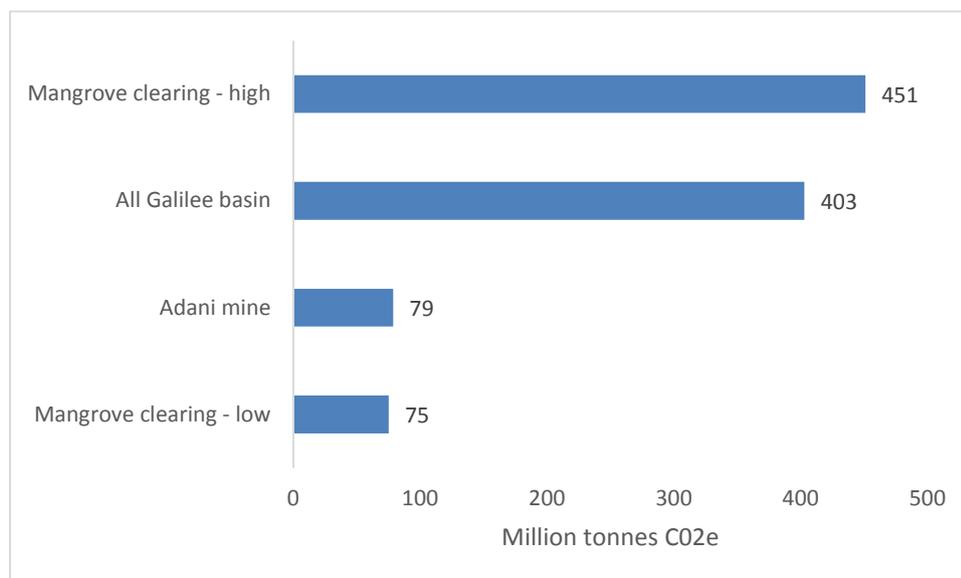
The emissions estimates shown in Figure 1 exclude land use change, which with recent increases in vegetation clearing are likely to increase substantially.³

Australia's larger contribution to emissions is through coal exports. Australia is the largest exporter of coal in the world, exporting 389 million tonnes in 2015-16.⁴ This is set to increase with state and federal governments determined to develop the Galilee Basin in Queensland. Controversially, the federal government is looking to subsidise the development of the Adani mine in the Galilee Basin via a \$1 billion discount loan.⁵ The development of the Adani project would likely lead to the development of other Galilee Basin mines.

The coal from the Adani mine would create 79 million tonnes CO₂e per year on average.⁶ The development of all Galilee Basin mines would result in 200 million tonnes of coal being produced per year.⁷ This would result in more than 400 million tonnes of emissions from combustion alone.⁸

Comparing this to mangrove deforestation emissions that blue carbon projects could address, we see that even if Australia's efforts on this front could end all mangrove deforestation emissions, this would be offset by expanded coal exports by Adani and other Galilee Basin mines.

Figure 2: Blue carbon emissions and Australian coal mine emissions



Sources: Donato et al (2011); Taylor and Meinshausen (2015), calculations in footnotes.

³ Robertson (2017) 'Alarming' rise in Queensland tree clearing as 400,000 hectares stripped, <https://www.theguardian.com/environment/2017/oct/05/alarming-rise-in-queensland-tree-clearing-as-400000-hectares-stripped>

⁴ Department of Industry (2017) Resource and Energy Quarterly June 2017, <https://industry.gov.au/Office-of-the-Chief-Economist/Publications/Pages/Resources-and-energy-quarterly.aspx/#>

⁵ Gogarty (2017) Adani Carmichael rail link: Why Adani may still get its \$1 billion government loan <http://www.abc.net.au/news/2017-11-07/adani-may-still-get-its-loan/9125424>

⁶ Taylor and Meinshausen Joint Report to the Land Court of Queensland on "Climate Change – Emissions."

⁷ Galileebasin.org (2015) The Projects <http://galileebasin.org/the-projects/>

⁸ Calculations based on US EPA (2017) Greenhouse Gases Equivalencies Calculator - Calculations and References <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

Of course, Australia's efforts on blue carbon will not reduce emissions by anything close to all mangrove clearing. As the foundation document of the Partnership states:

The Partnership is not a funding body but seeks to build a stronger enabling environment for blue carbon projects to be conceived to attract funding and support and to be successfully implemented.⁹

No figures have been published on how much money Australia has contributed to the Partnership or to implementing these projects. No estimates of emissions saved have been published. It is clear that whatever emissions reductions are achieved via Australia's efforts on blue carbon are dwarfed by our own rising emissions and the emissions the Australian coal industry exports to the rest of the world.

Conclusion

Australia's blue carbon efforts will make a minimal impact on emissions. While they could play a valuable role in helping communities adapt to and mitigate the impacts of climate change, it is hard to escape the conclusion that Australia's promotion of its blue carbon efforts are aimed more at COP diplomacy than emission reduction. The COP is being hosted by Fiji and small island states are pushing hard for ambitious climate action. Blue carbon appears more about Australia trying to look good at Fiji's cop than a real attempt at carbon sequestration.

⁹ International Partnership for Blue Carbon (2016) Foundation document, <https://bluecarbonpartnership.org/wp-content/uploads/2016/11/IPBC-Foundational-Document.pdf>