

Submission Greening Australia
ACT Greenhouse Gas Reduction Targets

Introduction

Greening Australia is Australia's largest environmental NGO with offices in all states and territories and many rural and regional locations around Australia. We have been in existence for 27 years and have a staff of 350 and a turnover of \$50M per annum.

Our work is the transformation of degraded landscapes. This is achieved through the restoration, expansion and establishment of biodiverse native forests, woodlands and other vegetation systems.

Greening Australia's contribution to greenhouse gas mitigation and climate change adaptation is through the establishment of biodiverse native forest carbon sinks that deliver a range of environmental services. The inherent diversity of native forest systems (as opposed to plantation monocultures typically selected for particular traits such as increased wood yield) provides the best guarantee for resilience to the current rapid climate change of the 21st century and beyond.

Greening Australia works with local communities to achieve enduring environmental outcomes.

Rationale

1. About 25% of global elevated CO₂ is due to forest clearing, making reforestation an important mitigation strategy.
2. The creation of a carbon market worth potentially billions of dollars can be leveraged to "turbo-charge" existing efforts to halt and reverse the degradation of Australia's environmental assets through the establishment of carbon sinks that reconnect isolated remnants of biodiverse native forest and woodland-establishing resilient landscapes that can adapt to climate change.

Biodiverse Native Forest Carbon Sinks are distinguished from typical carbon plantings by the following:

- The plantings are self replacing – they self-regenerate after natural disturbances such as fire and storms;
- They are at least 100ha blocks to ensure permanency and self replacement and to maximise their habitat value;
- They are sourced from seed native to the bioregion in which they are planted which makes them well-suited to local soil, slope and climatic conditions;

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- They restore native ecosystems, re-establishing original forest cover with the return of under storey and native grasses and can connect and buffer valuable native vegetation remnant sites or reserves;
- They strengthen current stocks of carbon locked up in native forest by connecting and restoring remnant vegetation;
- Over the longer-term they re-establish natural drainage systems, natural water flows and improve water quality by removing silt and sedimentation;
- They improve soil carbon;
- They are actively managed for at least 100 years;
- They are most capable of adaptation to climate change including hotter temperatures, lower and more variable rainfall, and more frequent fires. Local native species are adapted to fire, and consideration is given to maximising the genetic diversity of seed (and hence the resilience of plantings) by collecting it from large, viable populations (Broadhurst, 2007);
- They attract private sector capital into landscape repair; and
- They discourage the clearing of remnant native vegetation.

Investment in Carbon Sequestration

Carbon sequestration figures for the ACT are in the range of ~100 tonnes of CO_{2e}/ha based on the National Carbon Accounting Toolbox (NCAT), although there is high variability across the landscape. The NCAT is widely believed to be conservative when applied to environmental plantings and thus more work is required to accurately determine carbon yields. Greening Australia is currently undertaking a large research project to do just this in other parts of Australia. To supplement some initial research previously conducted in the ACT region, a plan for a more comprehensive study is currently underway.

Accurate yield figures are important to Australia meeting both its international as well as domestic targets.

Commonwealth Treasury modelling indicates the initial price of carbon at \$25-\$33/tonne, and applies a 4% real increase in this price across time.

Even with conservative yield figures, income from biodiverse native forest systems planted, in the first instance for restoration purposes, is a bonus that can considerably reduce landscape restoration costs.

Opportunities for the rural sector

Conservation plantings can restore ecological connectivity in highly fragmented agricultural landscapes. The effects of habitat loss through land clearing and the isolation of the remaining remnants of forests and woodlands is well documented (Saunders et al).

Conservation plantings at the appropriate scale can also sequester carbon, providing an additional income stream for farmers. Biodiverse carbon sinks have unprecedented potential to connect and restore Australia's over-cleared landscapes.

Greening Australia's work in the agricultural sector links conservation and land management with increased productivity and resilience to impacts of climate change. For example, **Whole of Paddock Rehabilitation** (WOPR) is an innovative approach to combating land degradation problems, restoring paddock health and providing multiple farm production benefits, including potential income stream from carbon sequestration.

The Business Case for Biodiverse Carbon

Biodiverse carbon sinks are a cost effective strategy for reducing greenhouse gas emissions and adapting to climate change.

The establishment of biodiverse carbon sinks provides an opportunity to build a portfolio of emissions offsets based on a diversity of locally appropriate native plant species growing across Australia's overly cleared landscapes.

The carbon offset market gives a dollar value to carbon secured in permanent biodiverse native forests that can withstand the inevitable droughts, fires and floods that periodically affect all regions of Australia.

Income from biodiverse carbon sinks can reduce the cost of landscape rehabilitation by half-providing two environmental outcomes for the price of one -emissions reductions and landscape restoration.

References:

Broadhurst LM (2007) **Managing Genetic Diversity in Remnant Vegetation: Implications for Local Provenance Seed Selection and Landscape Restoration**. Technical Note 01/2007, Land and Water Australia, ACT http://www.florabank.org.au/default.asp?V_DOC_ID=891
Saunders et al.

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