Submission on Road Map to halt and reverse Deforestation and Forest Degradation by 2030

Introduction

This submission reflects the experience of the authors in international climate, forests and biodiversity policy arenas since 2007, including science based analysis of the limitations of current approaches to climate mitigation in forests; and experience in Australian domestic policy on forests, climate and biodiversity from before the adoption of a National Forest Policy in 1992 to the present.

Between them, the authors have contributed to submissions to the UNFCCC and CBD and policy positions of CAN International, IUCN, the Climate Land and Ambition Rights Alliance, Biomass Action Network of EPN International, and the Global Forest Coalition.

The submission is in two parts. Part 1 focusses on generic issues raised by the Brazilian President relevant to the Road Map. Part 2 provides a case study for Australia and the opportunities for it to develop a Road Map to end deforestation and Forest Degradation by 2030. A key point of this submission is to highlight the importance of forests in developed countries for contributing to a global Road Map: Russia is the most forested nation, Canada is the 3rd most forested, USA the 4th and Australia the 7th.

Definitions: We have relied on UNFCCC definitions in UNFCCC decision 16/CMP.1 Land Use Change and Forestry 2005. We note that the original intention of developing biome based definitions of forests (Marrakesh Accords) never materialised - a failure that complicates development of a globally applicable Road Map. We also note that deforestation is only recognised if land is converted from forest to non forest and does not include the loss of forest canopy trees due to any form of industrial logging, including conversion of primary forest and other naturally regenerating forests to mono culture plantations. And, despite many UNFCCC decisions to define forest degradation, no UNFCCC definition of forest degradation exists. Forest biome, forest type and forest condition analysis are relevant to assessing forest degradation in every forested country. Definitional inadequacies also exist in reforestation and afforestation.

Forest Degradation: Definitions and approaches to degradation differ between countries with many definitions based simplistically on the loss of "site productivity", i.e., the capacity of the landscape to grow trees; a concept based in agricultural management. From this perspective, a forest is only considered degraded if it can no longer supply wood products. This approach to forest degradation can result in forests being so degraded they are effectively deforested. A definition is needed that enables the drivers of forest degradation to be identified and addressed, including all forms of ecological degradation such as: fragmentation from roads; conversion of natural forests to plantations; conversion of primary and old growth forests to pioneer and secondary regrowth forests; and increasing fire severity related to both climate change and inappropriate management.

A more comprehensive definition of forest degradation should recognise the loss of forest biodiversity, ecological function and structure, the loss of forest carbon stocks, and that these impacts are the consequence of forest management for commodity production (wood production systems). This form of degradation – especially in wet tropical and cool, wet temperate forests – opens up the forest canopy and creates edge effects, that promote drier conditions and increases the vulnerability of forests to drought and fire (Rogers et al 2022).

The prevalent "site productivity" interpretations of degradation ignore the importance of differences between types of forest and their ecological condition. IUCN recognises that there is a continuum of forest condition from high ecosystem integrity to low ecosystem integrity and that converting forests from one state to another leads to changes in their integrity (IUCN PF-IFL). Changes in ecosystem integrity lead to changes in the ability of forests to resist threats that are increasing with climate change as well as their capacity to adapt to climate change. The ability of high integrity forests (primary, old growth and mature forests) to continue to accumulate and retain their carbon stocks over long periods of time is their most important climate mitigation value.

At the simplest level, converting primary or old growth forests to wood production forests reduces their natural carbon stock by between 30-70% as most of the biomass carbon is stored in big old trees which are removed by forest management for commodity production (Rogers et al 2022); stocks that are never regained while ever those forests remain in wood production. Converting natural forests to plantations further reduces the average carbon stock given the relatively young age at which harvesting occurs as does persistent re-clearing of agricultural land. In every case the loss of biodiversity contributes to lower ecosystem integrity and increased risks from pests, disease, drought and fire.

The sub categories of forest identified and reported on by the FAO are helpful for further delineating forest degradation. For a comprehensive discussion of forest degradation see (Mackey et al 2023; Rogers et al 2022; Della Sala et al 2025; Cadman 2008).

Ecological forest restoration is another blind spot in international forest policy. The climate mitigation and adaptation benefits of fostering natural forest recovery by, for example, allowing previously logged natural forests to recover their structure and natural composition have never been explicitly included as an important mitigation strategy (Keith et al 2022). Such an approach would deliver the lowest cost, least risk and largest carbon recovery return (Keith et al 2009). Instead, reforestation and afforestation are defined so simplistically that the terms are "biodiversity blind" enabling monoculture tree plantings including of non-native species to be the dominant action deployed rather than ecological restoration. To understand the importance of restoring ecological integrity and connectivity see Bradby et al 2023; Mackey et al. 2023.

Achieving the goals of the Paris Agreement

There is about the same amount of carbon stored in the world's terrestrial ecosystems as there is in all known fossil fuel reserves of coal, oil and gas - about 45% of which is in forest ecosystems. Annual gross forest loss & degradation emissions are around 8.1 Gt C and annual net forest removals are 7.6 Gt C. We cannot limit warming to as close as possible to 1.5 degrees without protecting forests. However, we have created a new challenge for retaining relatively stable forest carbon stocks – escalating climate risks to our forests. Meeting this challenge depends on greatly improving our understanding of the importance of forest ecosystem integrity and the natural biodiversity that underpins it, for resisting, adapting to and reducing, the increasing risks to ecosystem carbon stocks from increasing extreme weather events including heatwaves, droughts and wildfire.

Some forest carbon stocks are at much greater risk of loss than others. Some forms of forest management interact with climate change to amplify the impacts of threats like drought and fire that are increasing as our planet warms. Any action that damages the capacity of forests to generate and maintain a cooler and moister interior micro climate results in risks to carbon retention in this era of global warming. In all biomes, fragmentation and edge effects, including from logging (which opens the canopy) interact with climate

change to increase the severity of drought and fire – stressors that are increasing with climate change (Wilson, Bradstock & Bedward 2022; Bushfire Report 3, 2021).

Article 5 of the Paris Agreement aims to encourage parties to protect the capacity of forests to retain carbon reservoirs (stocks) as well as their capacity to sequester carbon (sinks). Yet the UNFCCC has never fully operationalised Article 5 of the Paris Agreement. The need to protect our most stable forest carbon reservoirs, the main mitigation value of forests, has been overshadowed by forest carbon accounting rules that focus on net annual fluxes into and out of the atmosphere, ignoring the fact that losing the carbon stored in our highest integrity forests (primary, old growth and long unlogged, natural forests) will be irrecoverable in climate-mitigation relevant timelines.

We ignore the call in the preamble of the Paris Agreement to protect biodiversity and ecosystem integrity at our peril. Fortunately, the Global Stocktake decisions CMA 5 paras 33 and 34 point the way to finally addressing this shortcoming.

Aligning Forest mitigation, adaptation and biodiversity outcomes

Recent submissions to the CBD recommending revisions to its forest biodiversity programme and to the UNFCCC on its forest mitigation work programme (Young et al (CBD) 2025; Young et al (UNFCCC) 2025) both make the point that biodiversity is a system driver underpinning the integrity and stability of, and reducing risks to, forest ecosystems. Retaining and where feasible recovering, forest ecosystem integrity is essential for achieving the goals of each of the Rio Conventions (IUCN Technical Briefs: Connecting the Dots No 1; Connecting the Dots No 2; Connecting the Dots No 3) and aligns with the goals of the FAO and UNFF. In its 2025 Forest Resource Assessment Report the FAO makes a point of highlighting the superior climate mitigation and biodiversity conservation values of Earth's primary forests. The draft decision on the CBD revised forest biodiversity programme recognises the importance of protecting Earth's remaining primary forests. The Forest Climate Road Map should align with the Kunming Montreal Global Biodiversity Framework and support the revised CBD forest biodiversity work programme to be decided at COP 17.

Environmental integrity

In article 4 of the Paris Agreement parties agreed to reducing emissions to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century in order to stabilize GHG concentrations in the atmosphere. Unfortunately the practical application of this imperative has been to coin a term not used in the Paris Agreement of 'Net Zero'. The concept of Net Zero is only applicable at global scales, i.e., in relation to stabilisation of the global carbon cycle by reducing human emissions to a rate compatible with removals by natural sinks (ecosystems and oceans) (Becken et al 2024). Unfortunately, Net Zero has been applied at national and even sectoral scales where an accounting, spread-sheet based "Net Zero" is achieved through reliance on offsetting. This is reflected in the scientifically flawed use of net carbon accounting in forests and the land sector that treats ecosystem carbon and fossil fuel carbon as if they are equivalent and exchangeable rather than representing distinct components of the global carbon cycle (Mackey et al 2013).

The Road Map must ensure environmental as well as ecological integrity. This requires recognition that Net Zero only makes sense in the context of the global carbon cycle and the fact that 20-35% of CO_2 emitted today will still be in the atmosphere in 2-20 millenia. Attempting to achieve Net Zero Emissions on an annual net flux basis through an unsustainable combination of fossil fuel emissions and short term removals is ultimately pointless (Griffith University 2025).

Given that global warming is fast approaching 1.5 degrees and that we are on a trajectory that would bring us close to 3 degrees, it is imperative that the Forest Road Map does not increase our reliance on offsets. Rather it should promote and incentivise the total mitigation benefit of forest protection: continuing the 7.6 Gt C annual removals and avoiding the 8.1 Gt C annual emissions from deforestation and degradation. The Forest Road Map must be cross referenced with the Road Map for Transitioning Away from Fossil Fuels. A

critical point of intersection is the increasing reliance on forest based bioenergy to replace fossil fuels. Both Road maps must reign in reliance on forest based bioenergy for the reasons outlined in the section below.

Forest Bioenergy and the Forest Road Map

Combustion of forest biomass at industrial scale in centralised energy generators for electricity and / or heat has been established and incentivised as a 'renewable' energy, and is exacerbating forest degradation as it entrenches, intensifies, and expands the impact of logging and carbon emissions, also causing deforestation in some sourcing locations. The practice of co-firing forest biomass with coal in coal-fired generators, allegedly but incorrectly claimed to abate ghg emissions, is also driving greater impacts on forests. In Indonesia, a government directive for domestic co-firing is expected to drive the loss of a minimum 2.3million hectares of natural forest.

Declaring biomass energy to be carbon neutral wrongly assumes that forests regrow quickly and fully offset the emissions from biomass production and consumption. The neutrality assumption is not valid because it ignores the decades to centuries long increase in CO_2 caused by burning biomass, and that the burning continues year on year. Burning biomass can only be beneficial in the long run if the logged area is allowed to regrow to the full extent of its pre-logged biomass and maintained there. Natural forests have a high carbon density compared to pasture, cropland, developed land and managed tree plantations. The carbon debt may never be repaid if development, unplanned logging, erosion or increases in extreme temperatures, fire, disease (all worsened by global warming) limit regrowth or accelerate the flux of carbon from the soils to the atmosphere. The impact of burning biomass for energy is an increase in CO_2, worsening global warming over the critical period to 2100 Sterman et al 2018.

For a full, referenced analysis of the impacts and trajectory of industrialised burning forest biomass for power see Burning Up the Biosphere, Biomass Action Network 2024.

Net forest cover needs to be unpicked

Information on net forest cover is not helpful unless accompanied by information on forest condition. A suggested approach is available in Keith et al 2025. Its recommendations are summarised below.

What Australia can and should do

Australia has one of the highest rates of deforestation in the world despite net increases in forest cover. Periodic re-clearing of native forests in the agricultural sector results in serious biodiversity loss and very substantial emissions. Based on data in the Australian Governments National Inventory Report, ending deforestation in Australia could reduce emissions by approximately 14.5 Mt CO_2 per year. Other analyses suggest emissions could be reduced by as much as 55 Mt CO_2 per year (Keith et al 2025).

Native forest logging in Australia has bequeathed a tragic legacy of forest ecosystem decline, increased vulnerability to drought and fire, serious biodiversity loss, reductions in forest carbon stocks and an uneconomic, unpopular, heavily subsidised sector of the timber industry (Wilderness Australia 2024). Native forest logging clearly results in forest degradation but is not reported as such anywhere. Plantation establishment has often involved the conversion of native forests, a practice that continues in some areas today. Conversion of native forests to plantations is a serious form of forest degradation.

Fire management practices that increase forest degradation present an increasing problem for fire severity in Australia. The scientific evidence is clear that fire severity is increased in young regrowth forests and that fragmentation from all sources, including logging, contributes to fire severity (Wilson, Bradstock & Bedward 2022; Bushfire Report 3, 2021).

There is ample opportunity in Australia to reverse this situation. Ninety per cent of Australia's domestic timber needs are met from existing plantations. Logging in public native forests managed for wood supply

has ceased in two Australian States, although deforestation and forest degradation in the name of fire and forest management and mining remains a significant problem in those states.

Changes to Federal Environment laws and standards provide an opportunity for greater forest protection and restoration across all tenures. So too would promised science based revision to Australia's out-dated National Forest Policy. Retaining and improving the restrictions on wood based bioenergy under Australia's Renewable Energy Act would prevent a potentially devastating increase in forest degradation. The Climate Change Authority has identified immediate action to protect all old growth forests and reduce native forest logging by 50% as an important pathway for Australia to meet it's 2035 emissions reduction targets. Science based analysis reveals that ending deforestation and forest degradation (NF logging) before 2030 would make a significant contribution to meeting Australia's 2030 emissions reduction targets.Analysis of the Australian government's National Inventory Report, suggests that ending deforestation would reduce emissions by 14.5MtCO_2-e per yr and ceasing logging would reduce emissions by 7-11 MtCO_2-e per yr.

Federal government spending on nature protection in Australian has been systematically reduced by successive governmnets to well below 2013 levels. Yet the need for increased government investment in nature protection and restoration has never been greater (ALCA 2026, Biodiversity Council 2026). The Native forest sector of the timber industry is in long term decline (Wilderness Australia 2026). It is entirely feasible for governments at all levels in Australia to fund a just transition out of native forest logging and improve regulation and where needed provide financial support, to prevent clearing on agricultural land. Australia is the 4th largest exporter of fossil fuels. Taxation reform and redirecting subsidies for harmful activities, as Australia committed to do when adopting the Kunming Montreal Global Biodiversity Framework, is another obvious source of funding (The Australia Institute 2026).

There is also ample opportunity in Australia to reform approaches to land sector accounting. Australia could report forest area change, disaggregated by forest type, age and condition to reflect differences in ecosystem integrity, i.e., primary, secondary, regrowth, planted and plantation forests. It could report on forest age or the time since disturbance and progressively include additional indicators of ecosystem composition, structure and function. Changes in forest area could be reported as gross gains and losses of each category of forest. Doing so would facilitate improved conservation management of forests across the landscape (Keith et al 2025).

There is also ample opportunity in Australia to work with First Nations Peoples to improve the protection and conservation management of our forests. Conservation management of forests would benefit greatly from collaborative engagement between traditional owners, scientific and local communities.

Sincerely,

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Wilderness Australia

Aila Keto
Australian Rainforest Conservation Society

Jenny Weber
Bob Brown Foundation

Alice Hardinge
The Wilderness Society

Leanne Minshull
The Australia Institute

Signed on behalf of:

BALLARAT WILDLIFE
Rehabilitation & Conservation

CENTRE FOR CLIMATE SAFETY

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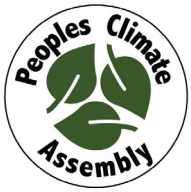

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