The
COASTWATCHERS
Association Inc

ABN 66 003 550 939

Eurobodalla's peak environment group

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Garnaut Review Secretariat,
Level 2, 1 Treasury Place
East Melbourne
Victoria 3002

SUBMISSION IN RESPONSE TO ISSUES PAPER 1
CLIMATE CHANGE: LAND USE – AGRICULTURE AND FORESTRY

To date the attention of governments has been overwhelmingly focused on fossil fuels in their efforts to reduce greenhouse gas emissions. Even though forest ecosystems are Australia's major terrestrial carbon sinks, little attention has been paid to their role in climate change mitigation. Regional Forest Agreements and forest policies are out of date. They focus solely on the harvesting of wood and take no account of the value of the carbon sequestration services provided by our mature native forests. Recent scientific research in temperate Australia has shown that native forest management should be considered when developing terrestrial carbon management options, and for terrestrial carbon accounting more generally.

The Coastwatchers Association sees this review process as an opportunity to consider the case for ending logging of native forests. They can be protected and, where necessary, rehabilitated to become part of the solution. There is no need to wait for the development of a new technology. Results can be immediate.

Mitigation options in the forestry sector

Globally, 75% of the carbon stored by the land is stored in forest ecosystems. The longer this carbon remains in the tree or the soil the longer it is out of the atmosphere. Logging decreases the terrestrial stock of carbon and increases the concentration of atmospheric carbon. When a mature native forest is logged some carbon may be stored for years or decades in wood products. However large quantities of carbon dioxide are released to the atmosphere immediately through disturbance of forest soils and post logging burns.

The latest scientific research suggests that logging of native forests is responsible for up to 20% of Australia's greenhouse gas emissions, taking account of losses from trees, understorey, soils and burning of residues. Analysis has shown that it is the big old trees,150 to 400 years of age, that provide the major stores of carbon in mature, undisturbed native forests. Relative to such forests, the impact of logging and silviculture practices in comparable forest types has created an increase in the smaller size class of trees and a decline in the larger size. In this way short harvesting cycles, for example only 20 to 40 years for woodchipping, not only *decreases* the amount of carbon that stays in a forest, it also *decreases* the length of time it stays there. In selectively logged forests on the NSW south coast the amount of carbon stored is reduced on average by 40%. (1)

Most of the logging in native forests - which accounts for over 80% Australia wide and 93% in the Eden RFA area (on the NSW South Coast) - is to provide logs for the export woodchip industry. It is undeniable that woodchipping of native forests is a large generator of greenhouse gases.

ANU forest industry expert, Judith Ajani (2) has shown that Australia is now in a position to be able to substitute plantation timber for native forest supplies for the export woodchip market. It is even expected that there will be a glut of plantation supplies in the near future. Since the felling of large trees and destruction of large amounts of coarse woody debris could be avoided, forestry carbon dioxide emissions would be far *lower* if this substitution were to take place.

The recognition of carbon sinks in the forestry sector

Issues Paper 1 does acknowledge the fact that the forestry sector can "provide significant capacity as carbon sinks." However it goes on to say that emission sources and sinks are often "small, diffuse and difficult to measure and verify at the individual entity level." This completely overlooks the fact that temperate native forests in south-east Australia cover approximately 70 940 square kilometers with only 32% classified as unlogged in 1992. All of these native forests could act as a significant sink for atmospheric carbon if left undisturbed.

Quantification of the impact of anthropogenic activity on the terrestrial carbon sink is an important component of the global carbon budget. Whilst it is true that Kyoto-related terrestrial carbon accounting is focused primarily on aforestation, reforestation and deforestation since 1990, a case can be made for consideration of native forests when developing terrestrial carbon management options.

A method has been developed (1) that provides a general framework for determining the carbon sequestration potential across a range of forested ecosystems in temperate Australia where the current biomass is below its potential because of historical forestry management practices. In this study, current carbon stocks in above ground vegetation were consistently *well below* the estimated carbon carrying capacity of a mature undisturbed forest of comparable forest type. This is largely due to removal of biomass in large trees through prior logging activity. Coarse woody debris is also a commonly neglected forest component in assessments of carbon stock and sequestration, particularly in mature native forests. Since it can account for 19% of total above ground carbon, this should be included in carbon budgets.

It is important to point out that forecasting models used by the forestry industry are only calibrated for younger regrowth forests. All their data is based around these models which do not consider the carbon storage potential of older, undisturbed native forests. The effect of this is to significantly undervalue their carbon sequestration services.

Opportunities for adaptation

1. **Cease immediately all broad scale native forest logging**. This will eliminate the millions of tonnes of carbon dioxide emissions per year that are produced from logging native forests. It will also ensure that the very important large trees and coarse woody debris remain in place. Although carbon uptake by photosynthesis eventually declines as trees age, mature forests continue to sequester carbon in their soils. Thus by not logging native forests we significantly increase the amount of carbon that can be sequestered. The quantities of available plantation supplies will triple over the next two to three years and can replace native forest supplies.

2. **Manage regrowth forests towards and old growth state by increasing forest age, tree size and leaving coarse woody debris in situ.** The fact that above ground carbon stocks in managed native forests are approximately 60% of their potential carbon carrying capacity - mainly from removal of large trees during logging - suggests that previously logged temperate Eucalyptus forests will function as significant carbon sinks: if regrowth is allowed to recover from previous disturbance. The timeframe over which these forests would be expected to recover has been analysed. (1) It is predicted that an average forest plot would take approximately 53 years to exceed 75% of it carbon carrying capacity and 152 years to exceed 90%. These time scales are far greater than allowed for in logging rotations currently in use.

3. **Invest in the protection and remediation of native forests through a carbon trading scheme**. This will provide revenue for the States and Territories and any private native forest owners. The revenue would be much larger than could be earned from logging, predominantly for the woodchipping industry, both presently and in the foreseeable future.

4. **Restructure the native timber industry**. This is long overdue and is *not* a complex task. Native forestry forms a small proportion of the total timber industry. For example, the wages and salaries bill in the woodchipping sector were $55 million dollars in 2004-5, compared with $3005 million in the total forest production industry. Technological change has reduced employment, and the significance of the industry within regional economies is much smaller than it was. There are regional growth opportunities in the timber industry's much larger, more efficient and faster-growing softwood sectors.

5. **Develop policies for our public native forests that are relevant to new public concerns and new economic realities.** With agreement from the States, an adjustment package could be developed for workers and contractors. Compensation for contracted owners of private native forest and export chip mills with contracts still to run would also be needed.

Conclusion

Concerns about climate change and the knowledge now to hand about the carbon sequestration potential of our native forests, make a compelling case for stopping logging of native forests. Now is the time to add the protection and remediation of native forests to Australia's strategies for mitigating climate change. Leadership at the national level is imperative and needs to occur as a Commonwealth priority.

Jenny Edwards
Acting Secretary

REFERENCES

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(2) Judith Ajani. The Forest Wars. Melbourne University Press 2007