



Draft forest management plan 2014–2023 and carbon

Forests play a major role in regulating the global carbon cycle, which consists of carbon stored in the atmosphere, the land and the ocean and continuous movement between these stores. Carbon is stored in native forests and tree plantations in biomass (above ground in living and dead trees, other vegetation, surface litter and woody debris, and below ground in roots) and in the soil.

Australia's *State of the Forest Report 2008* found that Australia's forests absorb more greenhouse gases than they emit and a net amount is absorbed in sustainably harvested native forests. The main historical source of emissions associated with forests is permanent clearing for agriculture and development of urban areas and associated infrastructure.

There are four strategies to mitigate carbon emissions related to forest management:

1. increase forested land through revegetation
2. reduce emissions from deforestation and degradation
3. increase the carbon density of forests at both stand and landscape scales
4. expand the use of wood products that sustainably replace fossil-fuel emissions.

Not all of these options are available under the Draft plan – there is little cleared land available for revegetation vested in the Conservation Commission in the plan area, for example, and the end use of forest products is outside the scope of the Draft plan.

However, rehabilitation following disturbance of native vegetation through mining or other activities will continue to be actively pursued to return habitat, biodiversity, carbon and other forest values. The opportunity to rehabilitate land affected by *Phytophthora* dieback exists, but is constrained by costs and the challenge of either finding dieback-resistant stock to replace the plants that have died, or changing the species composition.

The Draft plan contains the first indicative estimates of carbon stocks in native forests on the lands vested in the Conservation Commission in the plan area.

The Department of Environment and Conservation's (DEC) tree volume inventories (using 23,470 aerial photo plots and over 2,000 ground plots) have been used to provide estimates of the above-ground forest biomass, from which broad regional estimates of the above- and below-ground carbon stocks have been calculated:

- 72.8 million tonnes of carbon in formal reserves and forest conservation areas
- 91.3 million tonnes of carbon in State forest and timber reserves.

The lower figure for formal reserves and forest conservation areas is due to several factors – for example, more than 28 per cent of the total area in these reserves is made up of ecosystems with very low standing woody biomass, such as shrub, herb and sedgeland, rocky outcrops and sand dune systems.

The Draft plan includes proposed changes and management options that could alter the sustained yield figures compared with the current forest management plan. From the many possible combinations of these settings, two scenarios for the calculation of sustained yield are included in the Draft plan. Projected changes in the indicative carbon stores for each scenario are also included.

By 2014, all lands vested in the Conservation Commission in the plan area will hold an estimated 164.1 million tonnes of carbon. Under the Draft plan's scenario 1, with settings that together provide for a higher sustained yield, the carbon store is estimated to be 169 million tonnes by 2023. Under scenario 2, with settings that together provide for a lower sustained yield, the carbon store is estimated to be 172.5 million tonnes by 2023.

The Draft plan also proposes that DEC will report on carbon stores in the next draft forest management plan (for the period 2024-2033).

The *Draft Forest Management Plan 2014-2023* is available at www.conservation.wa.gov.au and is open for public comment until 7 November 2012.



Department of
Environment and Conservation

