



Software for sharper estimates of carbon sinks

CSIRO recently licensed forest growth prediction software to CO2 Australia – manager of Australia’s largest dedicated forest carbon sink operation – for more accurate estimates of carbon sequestration rates.

The software package, CABALA, will be used to estimate the amount of carbon sequestration that takes place in CO2 Australia’s tree plantings based on data inputs on rainfall, temperature and the different tree species used.

CO2 Australia Managing Director, Andrew Grant, said CABALA and the science behind it had been critical in providing his company with the technical tools to develop large-scale carbon sink projects.

The company plants trees solely for carbon sequestration and has established plantings in cleared agricultural areas on behalf of a range of corporate and government clients.

New satellite for precision mapping of CO₂



The new Orbiting Carbon Observatory will provide the most accurate maps to date of carbon dioxide sources and sinks globally. NASA

At the time of publication, NASA was due to launch an Orbiting Carbon Observatory (OCO), designed to accurately measure concentrations of CO₂ in the lower atmosphere so scientists can more reliably determine how and where it is being emitted and recycled.

The aim of the OCO project

is to locate areas where CO₂ concentration varies by less than 1 part per million from background levels, which are currently about 383 parts per million. NASA says this is the first time this level of accuracy for CO₂ measurements from space has been achieved.

While NASA’s existing Aqua

satellite detects CO₂ at altitudes of 5–10 km above the Earth’s surface, OCO will measure concentrations closer to the ground where warming effects are more pronounced.

Until now, data on atmospheric CO₂ levels has come from about 100 ground sites throughout the world and from indirect sources, such as extrapolations from reports on consumption of oil, coal and natural gas.

The OCO’s maps of CO₂ concentration will enable researchers to more precisely locate carbon sources such as forest burning and clearing, and quantify the CO₂ released by these processes. The orbiting observatory is sensitive enough to identify columns of carbon within an area as small as three square kilometres.

CO₂ concentrations in the atmosphere vary with time of day and with season. To remove the effect of such daily and seasonal changes the OCO will always acquire measurements at the same time of day, completing a global cycle every 16 days.

Carbon tax not trading, scientist advises Obama

High-profile US climate scientist, NASA’s Dr James Hansen, wrote an open letter to Barack Obama prior to his inauguration calling for stronger action on climate change. Among other issues, Dr Hansen questioned the effectiveness of carbon trading in reducing emissions, calling instead for an ‘honest, clear and effective’ carbon tax to more directly reduce dependence on coal and other fossil fuels.

‘Beware of alternative approaches, such as “per cent emission reduction goals” and “cap and trade”;

wrote Dr Hansen. ‘These are subterfuges designed to allow business-as-usual to continue, under a pretense of action, a greenwashing.

‘A carbon tax is the fairest and most effective way to reduce emissions and transition to the post-fossil fuel era. The entire tax should be returned to the public, equal shares on a per capita basis. No bureaucracy is needed.’

Dr Hansen suggested that dividends be inversely scaled to individual household and business carbon footprints, with energy efficiency rewarded by higher payments.

The carbon tax would need to be accompanied by better efficiency standards for building codes, vehicles, appliances and electronics as well as incentives for utilities to encourage efficiency ‘as opposed to selling as much energy as possible’.

Dr Hansen also called for governments to set a goal of reducing global atmospheric CO₂ levels to 350 parts per million (ppm) – lower than current atmospheric estimates of about 385 ppm and below the 450 ppm goal set by the United Nations’ Intergovernmental Panel on Climate Change. Achieving this



US climate scientist, Dr James Hansen, has called for a carbon tax and a goal of 350 ppm of atmospheric CO₂, well below the IPCC’s 450 ppm target for this century. Columbia University

goal would require all emissions from coal combustion to cease by 2030, he says.