

LOOKING AT LUCAS

+ LAND USE AND CARBON ANALYSIS SYSTEM

+ ISSUE 2 + AUTUMN 2008 +

Welcome to the second issue of 'Looking at LUCAS', the e-newsletter to keep you informed about progress of the Land Use and Carbon Analysis System (LUCAS) project. We hope you find the newsletter useful and welcome your ideas, feedback and suggestions to lucas@mfe.govt.nz

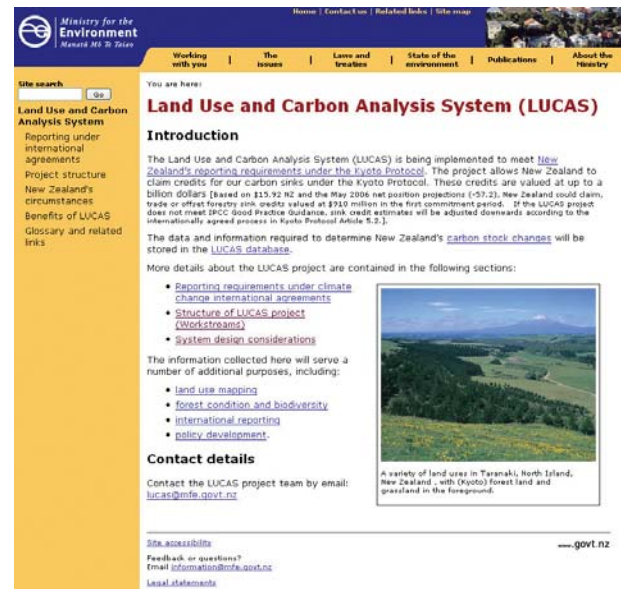
LUCAS Web Pages Go Live

The Ministry for the Environment launched a new website on 29 February 2008 to help explain the LUCAS project to a wider audience.

The website outlines how New Zealand will meet its obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. It describes the various work streams designed to acquire land use and land-use change information and to determine carbon levels associated with these changes, so we can report on the carbon stocks of New Zealand's forests and soils on an annual basis.

The website also provides a glossary of terms to help users understand some of the scientific greenhouse gas reporting and accounting terminology.

LUCAS will be operational by early 2010, when the first greenhouse gas inventory report under the Kyoto Protocol is due. From 2008 to 2012, the Ministry for the Environment will continue to collect new data and refine its analysis routines to improve New Zealand's carbon stock estimates. The final report for the first commitment period of the Kyoto Protocol will be submitted in April 2014.



The screenshot shows the LUCAS web page on the Ministry for the Environment website. The page has a blue header with the Ministry logo and navigation links. The main content area is titled 'Land Use and Carbon Analysis System (LUCAS)' and includes an 'Introduction' section. The introduction explains that LUCAS is implemented to meet New Zealand's reporting requirements under the Kyoto Protocol, allowing for carbon credits up to a billion dollars. It also lists sections for more details: Reporting requirements, Structure of LUCAS project, and System design considerations. A contact details section provides an email address: lucas@mfe.govt.nz. A small image of a landscape is also visible on the right side of the page.

Figure 1 The LUCAS web pages can now be viewed at <http://www.mfe.govt.nz/issues/climate/lucas/>



Ministry for the
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Airborne LiDAR of Planted Forests

For the carbon inventory of planted forests, the LUCAS project is using a combination of traditional field plot measurements and state-of-the-art airborne scanning LiDAR (Light Detection And Ranging). LiDAR systems use laser light to very accurately measure distances and can provide detailed three dimensional measurements of the ground surface and vegetation.

LUCAS is using LiDAR imagery to measure the heights of trees and to characterise tree canopies (see Figure 2). This has been calibrated with field measurements and modelling to determine the total amount of biomass carbon in our forests. An inventory of approximately 600 plots determined from a 4 km grid overlaid on all forests in New Zealand planted since 1990 is currently being surveyed with LiDAR.

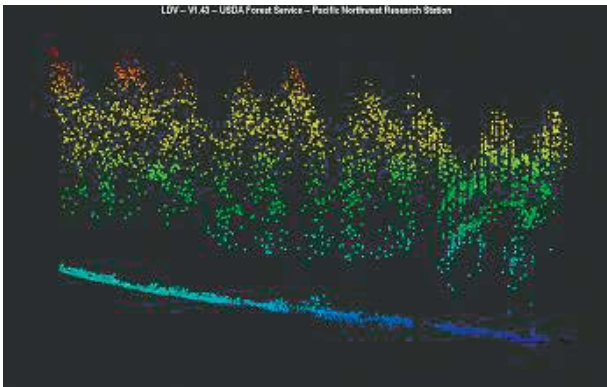


Figure 2 An extract of LiDAR imagery from a Pinus Radiata Kyoto Forest (planted post 1990) near Rotorua. This extract is 10 metres wide and clearly shows the profile of nine trees. The ground surface is coloured blue, and the tree foliage is coloured light blue through green and yellow to red, where yellow and red colours denote the highest points above the ground surface. The absence of any lower branches indicates the trees have been pruned.

Update on SPOT 5 Satellite Imagery

The Ministry for the Environment has negotiated an all-of-government purchase agreement for SPOT 5 satellite imagery. Under the purchase agreement the SPOT imagery is available to all government departments, crown entities and local authorities.

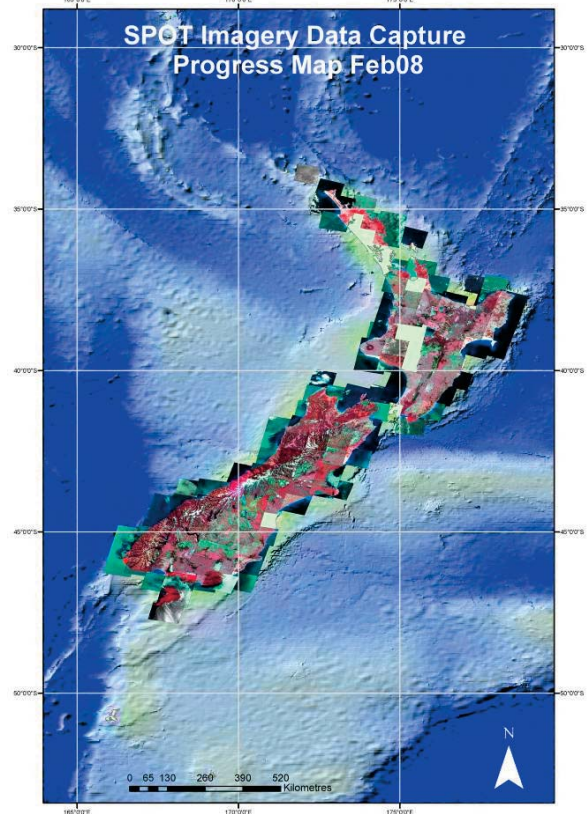


Figure 3 Showing locations where Spot 5 imagery has been acquired up to February 2008.

Over the past two summers, cloud-free imagery of approximately 90 per cent of New Zealand has been captured (see Figure 3 above). This imagery will be used to map land use at the start of the first commitment period of the Kyoto Protocol. Each SPOT 5 image covers 60 x 60 km and has a spatial resolution of 10 m.

+ NEED MORE INFORMATION?

The New Zealand Land Use and Carbon Analysis System is a programme of work set up to measure and monitor the amount of carbon (carbon stocks) held in New Zealand's forests and soils.

Carbon stock information is required for New Zealand's reporting requirements under the Kyoto Protocol and the UNFCCC.

LUCAS is an important part of the government's climate change policy package and will help inform our future international climate change negotiations.

If you require more information about the LUCAS project, the available SPOT 5 imagery, the LUCAS web pages, or the LiDAR forest inventory programme please email lucas@mfe.govt.nz

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