The Application of Remote Sensing and Other Spatial Data to the Monitoring and Management of Biosequestration.

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Oil Mallee Industry Conference 2011, Friday 15-4-11 Landgate

Content

- The importance of spatial data to biosequestration projects

- Carbon Trading Overview

- Spatial data from the science perspective

- Spatial data from the legal perspective

- Addressing regulatory requirements

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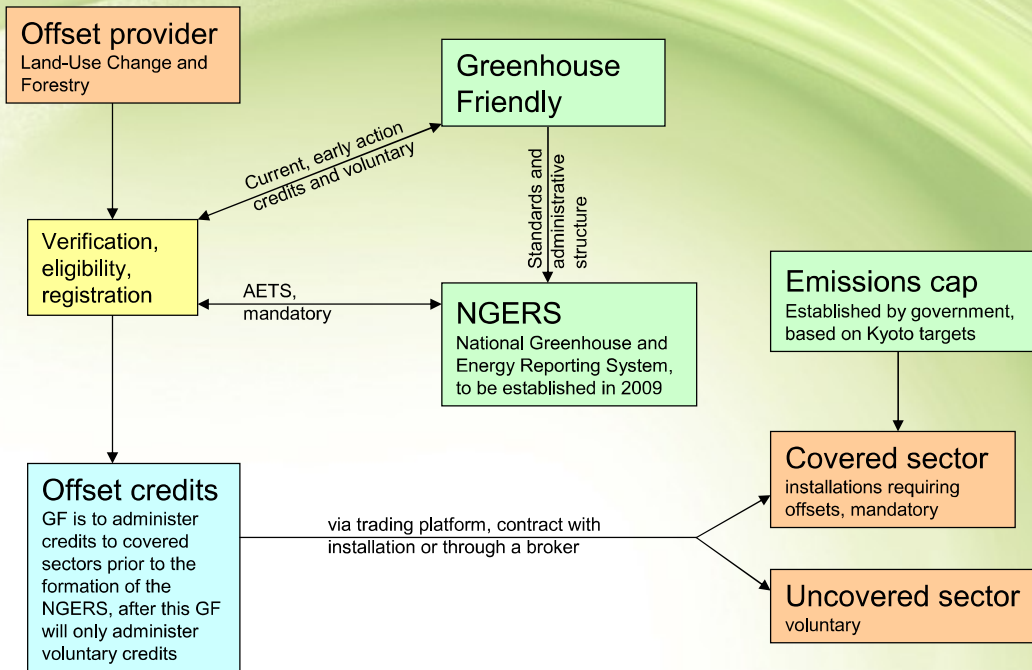
Why is remote sensing important?

To quantify carbon sequestration and its spatial variation in a manner which is cost effective for large spatial areas

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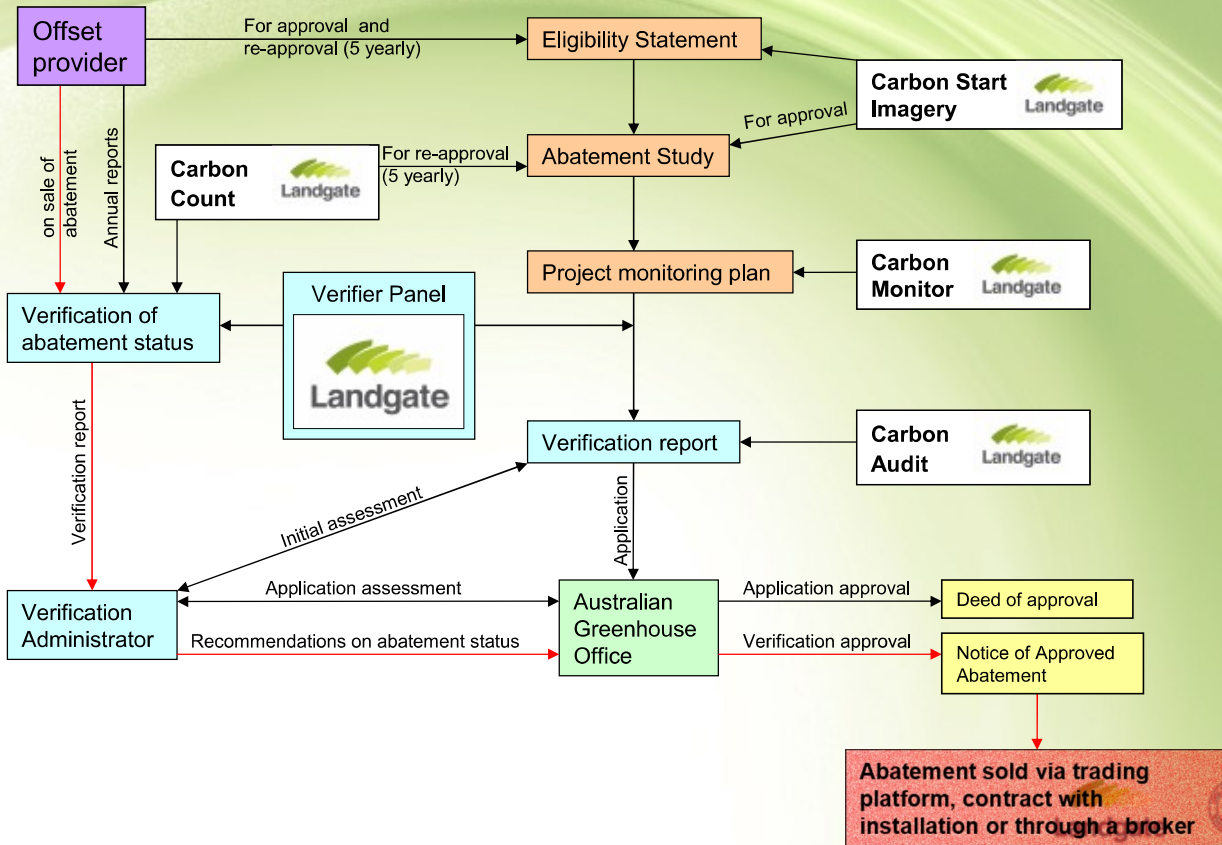   Meters

Australian Emissions Trading Scheme
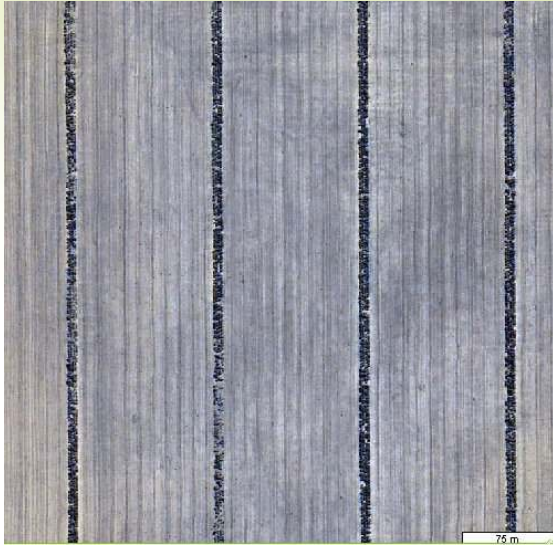
and interim period: forestry sector purchases

Offset provider
Land-Use Change and Forestry

Greenhouse Friendly

Verification, eligibility, registration

Current, early action credits and voluntary

Standards and administrative structure

AETS, mandatory

NGERS
National Greenhouse and Energy Reporting System, to be established in 2009

Emissions cap
Established by government, based on Kyoto targets

Offset credits
GF is to administer credits to covered sectors prior to the formation of the NGERS, after this GF will only administer voluntary credits

via trading platform, contract with installation or through a broker

Covered sector
installations requiring offsets, mandatory

Uncovered sector
voluntary

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Greenhouse Friendly forest sink abatement project approval

Steps to become an offset provider

Offset provider

For approval and re-approval (5 yearly) → **Eligibility Statement**

Carbon Start Imagery Landgate

For approval → **Abatement Study**

Carbon Count Landgate

For re-approval (5 yearly) → **Abatement Study**

on sale of abatement

Annual reports

Verification of abatement status

Verifier Panel Landgate

Project monitoring plan

Carbon Monitor Landgate

Verification report

Verification report

Carbon Audit Landgate

Initial assessment

Application

Verification Administrator

Application assessment

Recommendations on abatement status →

Australian Greenhouse Office

Application approval → **Deed of approval**

Verification approval → **Notice of Approved Abatement**

Abatement sold via trading platform, contract with installation or through a broker

Science Perspective

- Measurement-based estimation of biomass/carbon increase

True Colour Image

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Current Annual Increment (Tonnes/Ha)

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Legal Perspective

- Carbon rights, property titles & registration
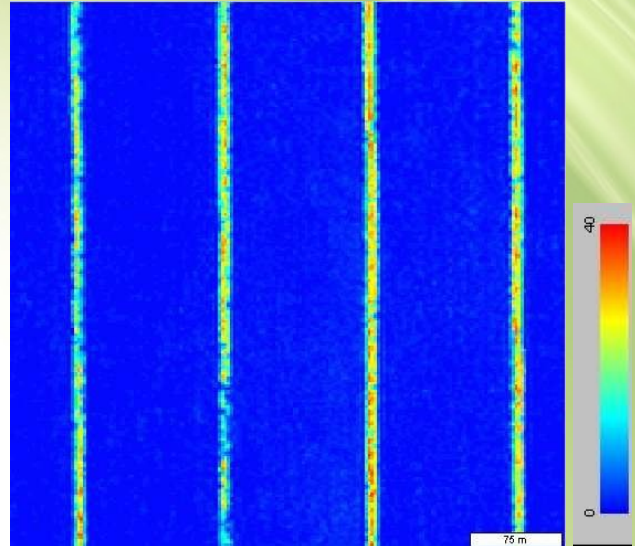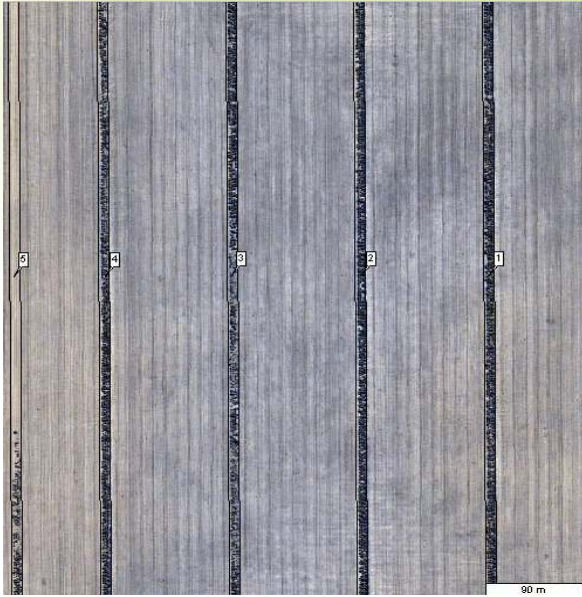
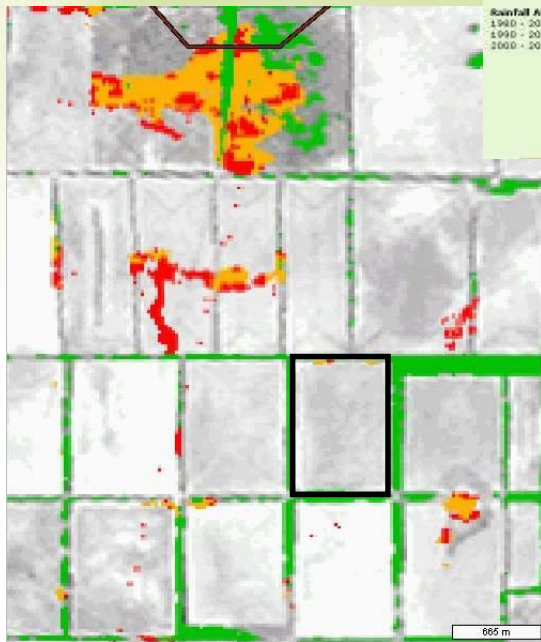

True Colour Image
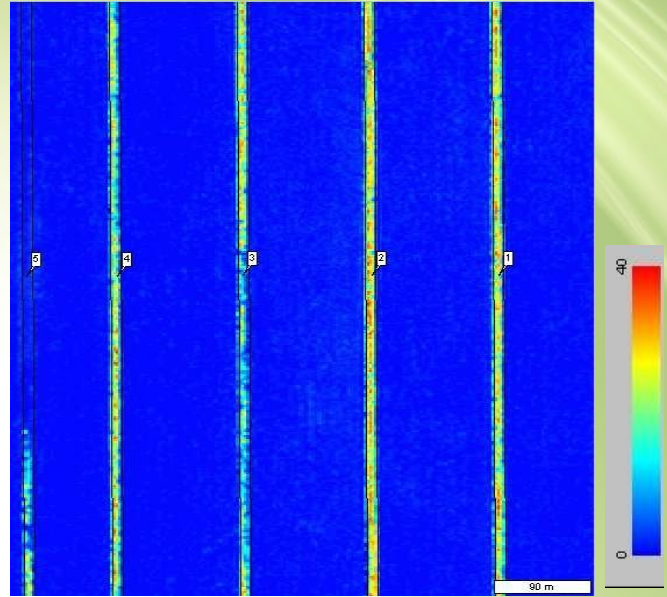
Current Annual Increment (Tonnes/Ha)

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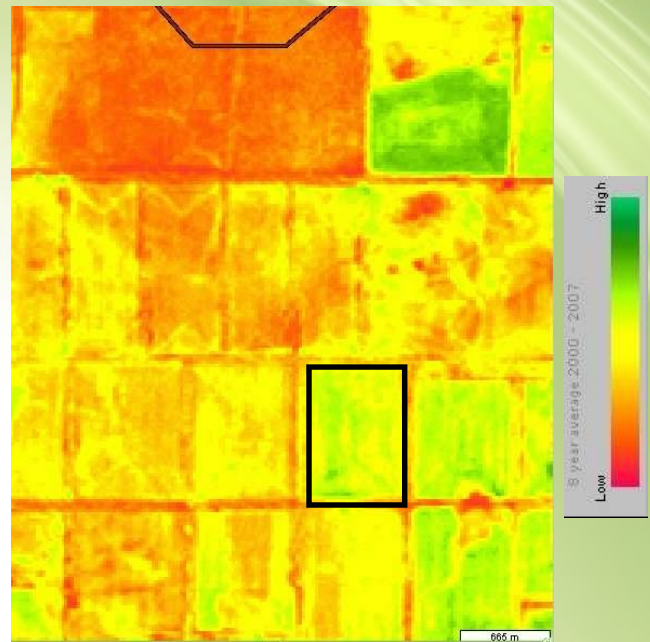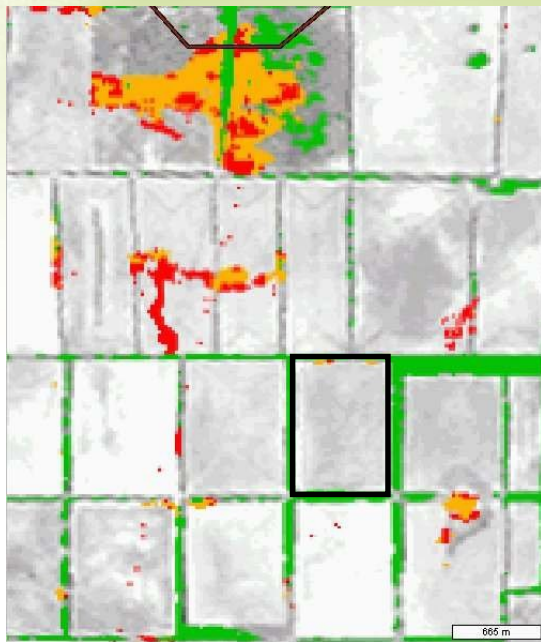# Addressing Regulatory Requirements

Planning & Eligibility

Annual Rainfall Chart for Point Clicked 1980 - 2007

point clicked: -20.6279295424799, 117.479645502044

Rainfall Averages (mm)
1980 - 2007: 300
1980 - 2007: 296.5
2000 - 2007: 263.25

Soil Description: Oc35

Gently undulating to rolling terrain with some ridges and uneven slopes and with the variable presence of lateritic mesas and buttes; some granitic rock outcrops; chief soils are hard alkaline red soils (Dr2.33), (Dr2.63), (Dr2.73) with variable areas of (Dy) soils such as (Dy3.43), (Dy3.83), (Dy3.42), and (Dy3.41). Associated are some (Dr2.22) soils; patches of soils of unit Ms8; and some (Gn2.12) soils on slopes especially in the more northern and eastern areas of the unit. Occurs on sheet(s): 5

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Addressing Regulatory Requirements

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Addressing Regulatory Requirements
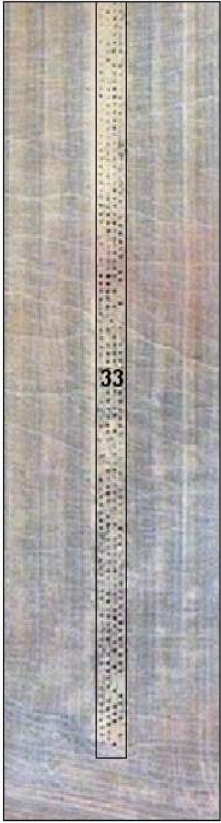
Monitoring

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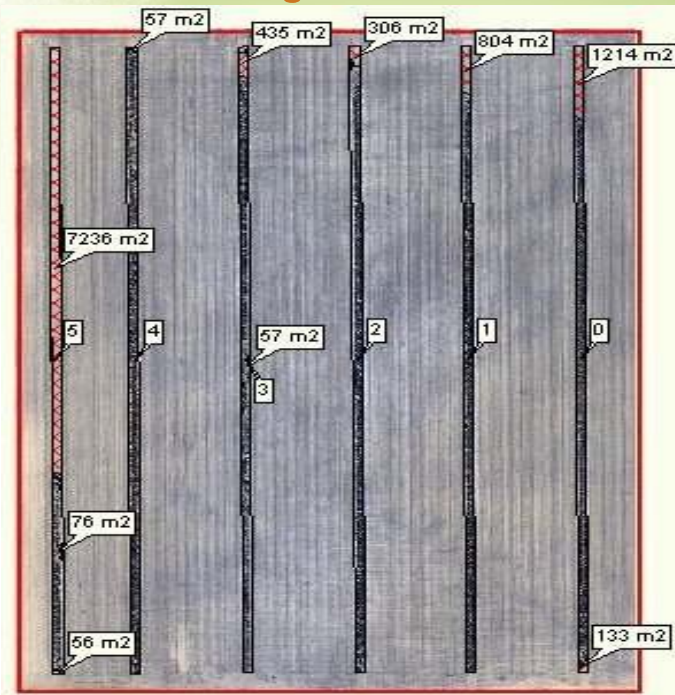
Addresses issues such as :
* plant survival
* plant health
* plant growth
* impact of fire

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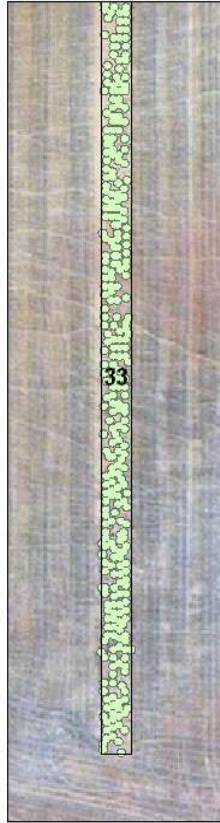# Figure 1: Marlingu Oil Mallee survival and projected canopy cover example (row 33)
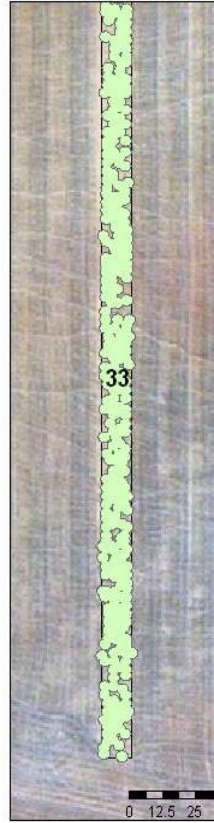

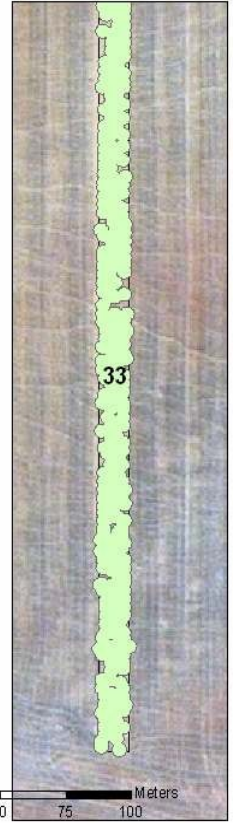Quickbird image with carbon right boundary

Trees located, survival 43%

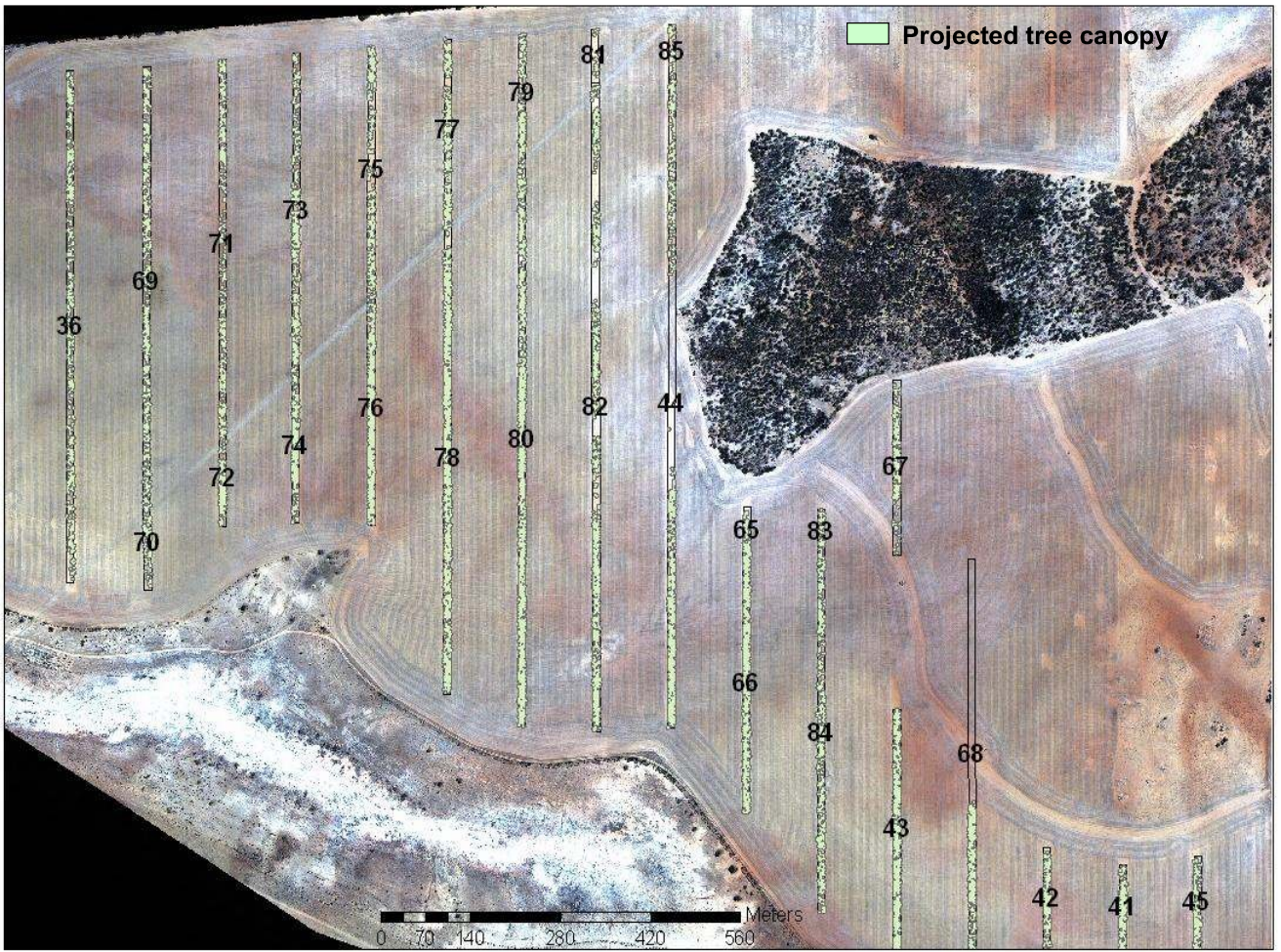3m diameter canopy, 56% cover

4m diameter canopy, 78% cover

5m diameter canopy, 95% cover

Projected tree canopy
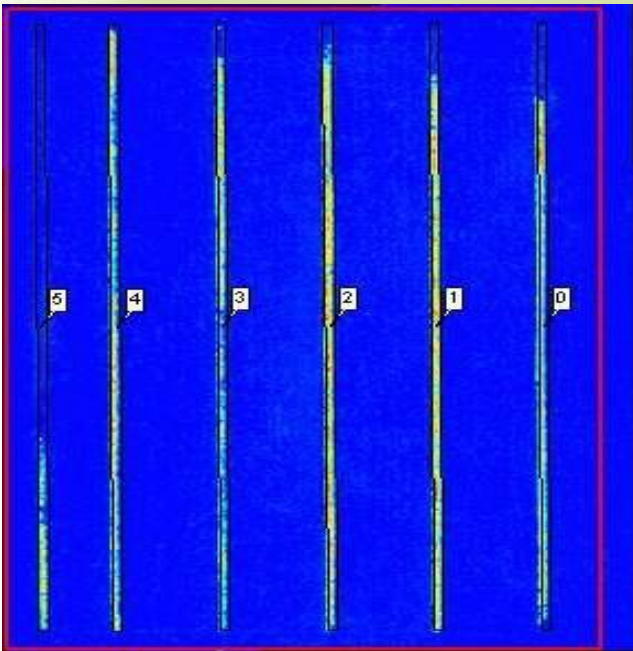
Addressing Regulatory Requirements

Validation

How do we optimise the ground sampling regime to make the project most cost effective ?

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Bringing The Elements Together

The use of spatial data :

- Provides certainty for project stakeholders & assessors

- Provides accountability and transparency to the carbon market

Spatial datasets and tools should be :

- Easily accessible – online environment

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Conclusions From A Week of Remote Sensing

Global earth observation programs for forest carbon
are not geared towards the kind of integrated plantings we are
talking about in Western Australia.

We will need to develop our own tools and methodologies for
Measuring, managing and monitoring carbon plantings.

This is possible under the CFI with a strong focus on the
'cooperative' model.

The interface with the CFI will be spatial and we should
Consider how best to take advantage of this.

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