

# GIS and Precision Agriculture

Geographic Information Systems (GIS) are software packages that allow users to:

- Create and overlay numerous maps.
- Manage data associated with maps.
- Analyse and manipulate data from multiple map layers.

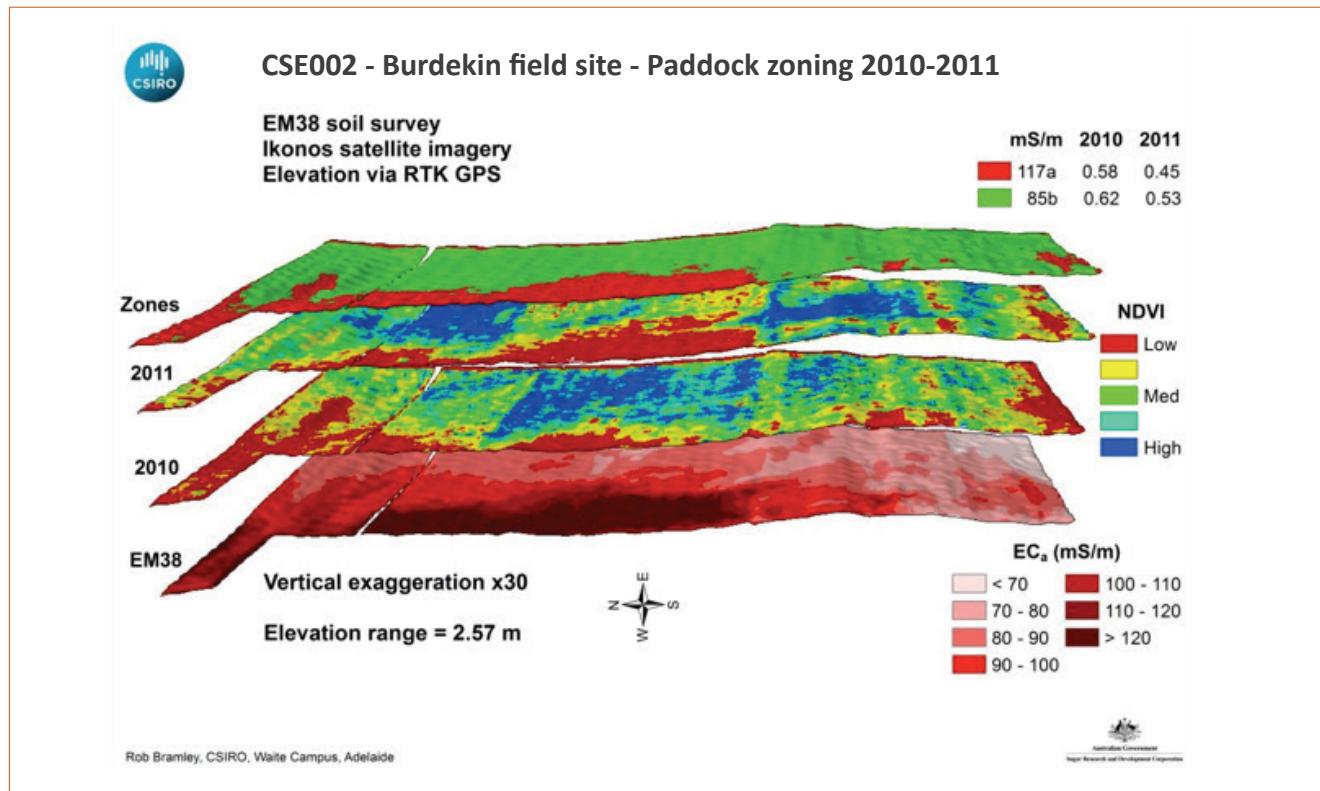
## GIS software

There are many different types of GIS software available with the most common being ArcGIS and MapInfo. Many farm management software packages also offer GIS components

including PAM, SMS, Farmworks, AgInfo GIS, SSToolbox, JDOffice/Apex and more.

Cost and options vary greatly so if you are interested in purchasing GIS software it is important to do some research and find out which software will best meet your needs and whether or not it is compatible with other software and equipment you are using.

**Below:** An example of map layers that have been overlaid in a GIS to create management zones (top layer).



## GIS and precision agriculture

GIS is used in precision agriculture to manage spatial information and help farmers make decisions. Some examples of data layers farmers might use include:

- soil type
- elevation (topography)
- crop yield
- crop quality
- field boundaries
- management zones
- remotely sensed imagery
- weed and pest locations
- historical land use.

Farmers often know from experience where high and low yielding areas on their farm are, or where they have particular problems.

The value of using GIS to record and analyse this information is that you can keep records over time and compare multiple variables (for example, soils, yield and elevation) to create management zones.

If you have this information in digital form, you can create variable rate prescriptions that can be directly transferred into a tractor display unit with GPS capability to streamline your site-specific crop management system.

Farmers who can't afford to purchase GIS software or who are not interested in spending the time to analyse data layers should consider using a consultant to help with these tasks.