



# ERIC

## RESOURCE APPLICATIONS

Environmental Research &  
Information Consortium Pty Ltd  
(ABN) ACN (81) 055 194 771  
Ph 02 4842 8182  
Ph 02 6161 3716  
Fax 02 4842 8183  
info@eric.com.au  
www.eric.com.au

## Vegetation / Land cover

### Application

Vegetation has historically been used as a guide to identifying the most productive lands. The type and condition of pastures similarly now determines land use and productivity. Native vegetation now also constrains land use by way of conservation.

Land cover is addressed when mapping vegetation. Features mapped include different land uses, such as agriculture and forestry, and the land condition by way of bare soil, water logging and vegetation condition. Land cover can be used to estimate and monitor production for crops, pastures, forestry.

The range of applications addressed has been broad and includes:

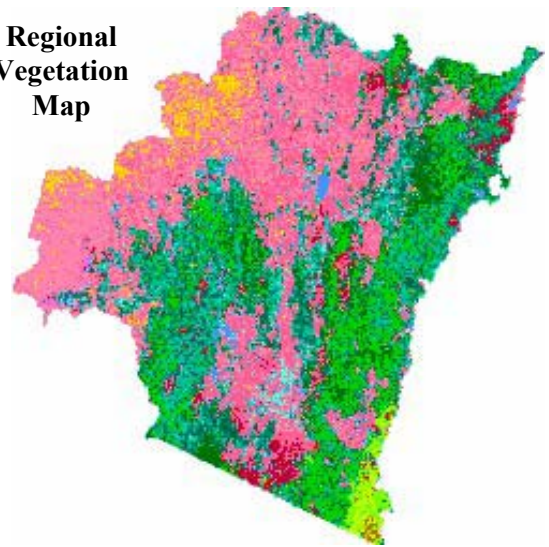
- Woody and grassy native vegetation for conservation
- Native woody vegetation clearing
- Waterlogging and erosion

### Raw Satellite Image



- Fires and fire hazard
- Weed occurrence and abundance
- Forest inventory
- Development corridors

### Regional Vegetation Map



### Approach

Modern satellite imagery provides opportunities to map the type and condition of vegetation and other land covers across broad regions at low cost. Use of numerical analysis reduces costs and provides reliable results. Together with the high spatial accuracy this allows monitoring of changes over time. The changes can be natural, as with drought, or through developments such as land clearing.

The forms of image and analysis used depend on the application. Optical satellite imagery usually provides the most cost effective solution and can be used to map features such as native woody vegetation, remnant grasslands, areas of waterlogging, the extent of bare soil, and different forms of land use

such as forestry, urban, and irrigation. Satellite radar is useful for mapping floods, irrigation application and leakage from irrigation channels. Airborne data can be acquired to address specific needs, as with high resolution information on crop condition.

The patterns of land use and vegetation can usually be mapped using a single image obtained under appropriate conditions. Multiple images are used to monitor change. The comprehensive image archive allows selection of a current / most appropriate image.

Multiple images can be used to improve the discrimination of particular features. The reliability of mapping remnant grasslands, for example, is improved by using images for different season to identify and exclude cropping and ploughed lands.

The ERIC product range addresses most requirements. However, the R&D capability allows the development of methods and results to best address specific requirements. Image selection is critical in producing the best result where this requires knowledge of the ecological characteristics of the systems as well as the characteristics of the imagery.

The information is provided as digital maps in GIS to ensure effective and efficient access and facilitate application. This also allows rapid production of purpose specific reports and maps as desired. The visual presentation aids in statutory presentations and public promotion as well as business planning.

The ERIC services are based around the integration and application of the vegetation and other products. They include consultation as well as system development and the provision of ongoing support.

## Products

The information developed from satellite imagery addresses many needs. Mapping native woody vegetation identifies land now generally quarantined from clearing while remnant grasslands are also potentially quarantined from development. Impacts such as erosion and waterlogging can be mapped to

identify risks and improve land management. This information can be cost effectively obtained for extensive developments such as roads, and pipe and power lines. The fire hazard map, developed to a statutory specification, further identifies constraints to development.

