

# CRC Spatial Information (Project 2.07)

**Australian Woody Vegetation Landscape Feature  
Generation from Multi-Source Airborne and Space-  
Borne Imaging and Ranging Data**

## **Landscape feature generation**

*Canberra, 21<sup>st</sup> February 2013*

# Landscape definition

*...The important point is that a landscape is not necessarily defined by its size; rather, it is defined by an interacting mosaic of patches relevant to the phenomenon under consideration (at any scale)...*

*...It is incumbent upon the investigator or manager to define landscape in an appropriate manner. The essential first step in any landscape-level research or management endeavor is to define the landscape, and this is of course prerequisite to quantifying landscape patterns...*

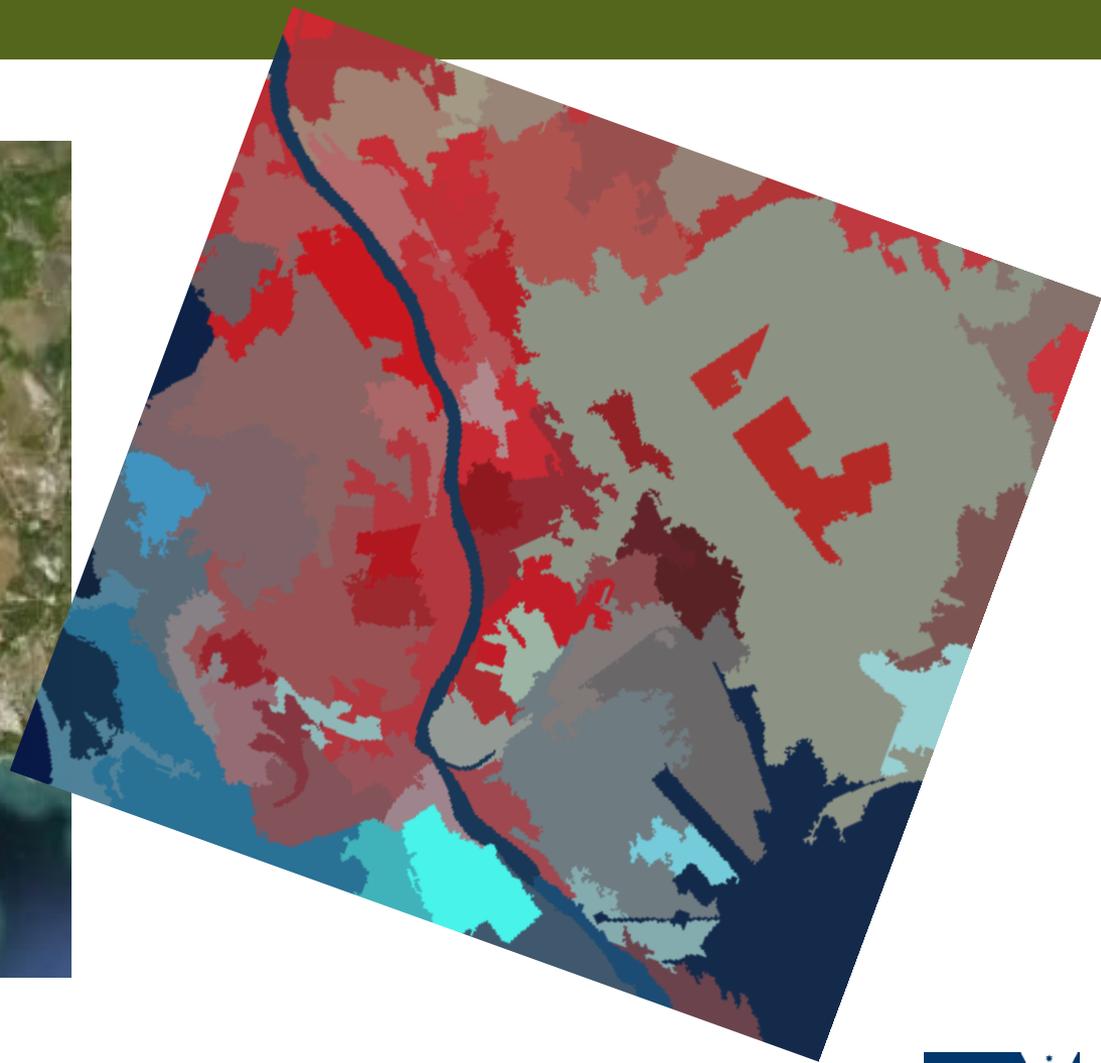
(Massachusetts University, lectures notes in Landscape Ecology)

# Landscape definition

- **Heterogeneity**
- **Larger than a patch**  
**Smaller than a region**
- **Composed of features or homogeneous units**

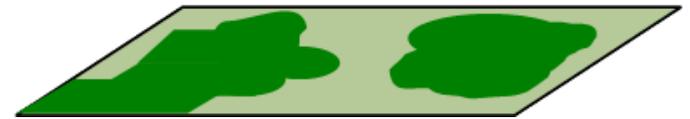
# Landscape feature

Patch or terrain **unit** that is **homogeneous** in a certain property. The property must be **relevant information** about the elements in a given landscape (used as a **descriptor**) or the threat present in the area (used for specific **management** and action measures)



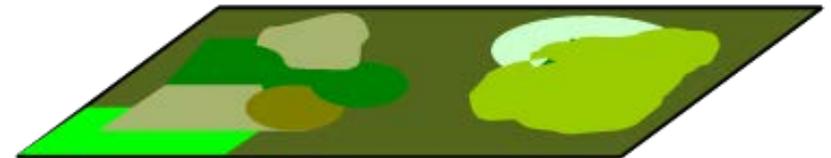
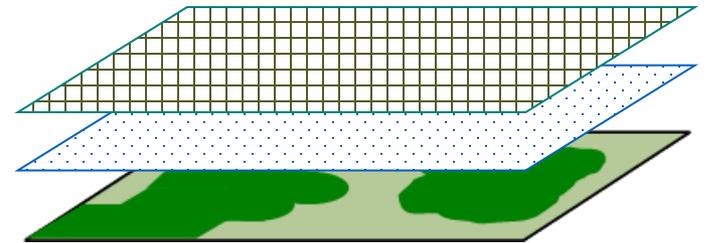
# Different levels of analysis

- Features created from a data primitive



- Features result of a composite of data primitives

- Forest type
- Canopy health
- Forest vulnerability
- Fuel moisture content



# Landscape feature generation. Examples...

## Forest type:

The landscape features would be result of combining a map of the forest extent (based on canopy height and cover) and vegetation classification.

## Forest health:

Based on canopy cover, overstorey/understorey presence and discolouration.

## Habitat mapping:

Based on species distribution, canopy health, canopy cover, fragmentation (size and shape of the different forest areas).

## Foliage water content:

Based on foliage density and moisture.

# Impact of scale

Which scale are we/our partners interested in?

Should features always be scalable?

## Objects

Tree crown / Individual stand

## Biome/system

Forest

Catchment

## State

Administration units





# *Discussion*

# Our definition