Analyzing changes in the extent and condition of a critically endangered ecosystem – data sources, methods and issues

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Temperate eucalypt woodland

Box gum grassy woodland
Area of study

• Delineated by the area protected under the Environment Protection and Biodiversity Act
  – Area is xx km² (roughly the size of United Kingdom
  – Accounts are to inform decisions about the best ways to conserve and restore the woodlands

• Natural Resource Management regions
  – The areas used by local land management agencies
Data sources

• Land cover

• Land use
  – National scale land use data (2016)

• Land value
  – National accounts
Methodological issues

• Computing power
• Data on land use only available for one year
• Land use classifications
• Different data are available for different spatial areas
• Land value only available at national level
• Calendar year vs financial year
Process model of box gum grassy woodland

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland
- 20-50% canopy cover
- Overstory of white box, yellow box and/or red gum*
- Age distribution continuous from young to old

Remnant
- 20-50% canopy cover
- Overstory of white box, yellow box and/or red gum*
- Mature/old trees only

Clearing and conversion to farmland
Grazing
Planting
Shrubland
Farmland
Land abandonment

Collapse
Land cover change 2000-2015 Riverina
Change in quantity of box gum grassy woodlands

Hectare box gum grassy woodland vs. Year
Why is it important to quantify changes in both the extent and condition of the ecosystem?

• Analyzing consequences of legislation in Australian states

• Assess impacts of increased protection and restoration
  – Carbon storage
  – Water
  – Biodiversity
  – Agriculture
  – Land value
For an endangered ecosystem, quantity does not guarantee quality

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