

Sustainable

Talking points for a discussion on the different uses and concepts of the word sustainability, with a particular focus on sustainable use of natural resources (including native biodiversity) in rural landscapes. The discussion was led by Sue McIntyre for the Murrumbateman Landcare group on August 3rd 2017.

The reference source for this material is:

McIntyre, S., Mclvor, J. G. & Heard, K. M. (2002) (eds) *Managing and conserving grassy woodlands*. CSIRO Publishing, Melbourne.

Dictionary

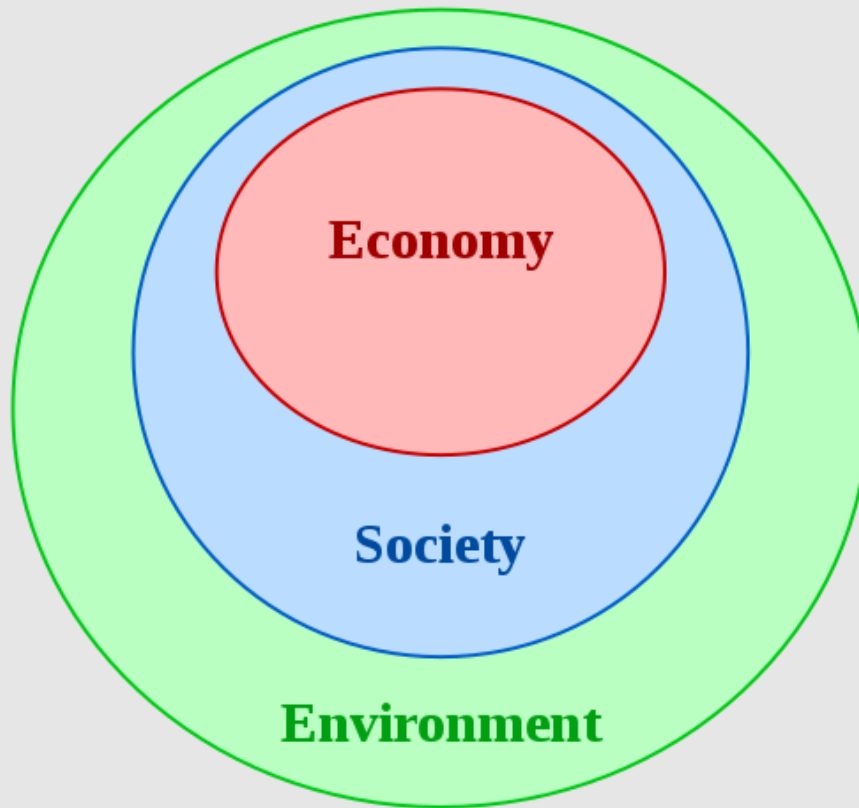
“**sustain**” meaning “to hold up:
to bear: to support: to provide
for: to maintain ...”

Ecology

“**sustainability**” “**sustainable**”

“the property of biological
systems to remain diverse and
productive indefinitely”

Three pillars of sustainability
Social, economic, environmental



Assumes that environment immediately constrains other activities, which it does not

Who determines what is to give?

“The triple bottom line”

Manifestations of (un)sustainability

Landscape use

Urban development
Agricultural development
Peri-urban development
Tourist development

Waste

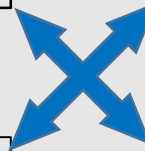
Landfill
Plastics
Overconsumption
Food waste

Pollutants

Sewerage
CO₂
Agri-chemicals, fertilizers
Industrial chemicals
Household chemicals

Resource consumption

Mining
Water diversion
Fishing, hunting
Grazing
Timber extraction



Sustainability is only a relative thing

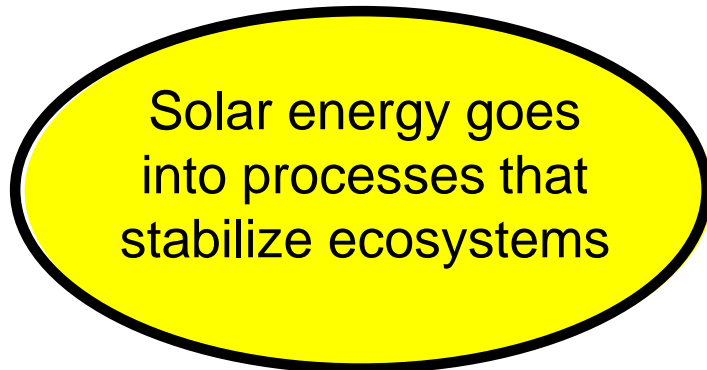
Mining and burning coal releases CO₂ – solar has embedded energy and toxins (panels and batteries)

Organic gardening reduces toxic chemicals – but it is an intensive land use, and in the wrong location can have adverse effects on biodiversity

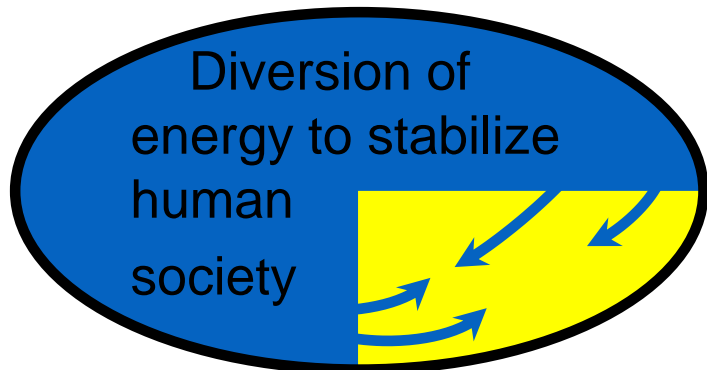
Biofuels fix CO₂ - growing biofuels covers the landscape with intensive agriculture and diverts land from food production

Riding a bike to work fast, and having an extra shower to cool off uses about the same energy as driving

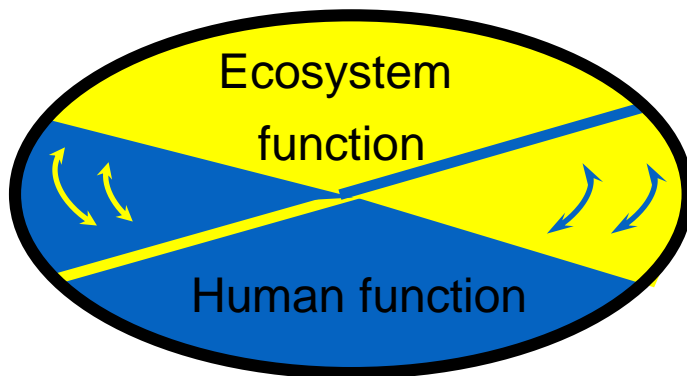
Owning a German shepherd might reduce your travelling energy budget, but uses similar resources to driving 14,000 km per year.



No humans



Intensive human land-use



Sustainable land-use

Managing & Conserving Grassy Woodlands

Editors S. ...re, J. G. McIvor & K. M. Heard

Managing & Conserving Grassy Woodlands

J. G. McIvor & K. M. Heard (Editors)

Maintain native vegetation

Ma...

Look after sensitive plants and animals

Con...

Look after water-courses

...s account o...
...an have...
...s an...

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...of the...
...vite...

Weeds wa...
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Rivers and...
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...an



- ◆ Property planning and management should consider the whole of property and its place in the catchment.
- ◆ Manage **soils** to prevent erosion and maintain productive capacity and water quality.
- ◆ Manage **pastures** for production and to maintain the variety of plants and animals.
- ◆ Maintain **trees** for the long-term ecological health of the property and catchment.
- ◆ Manage 10% of the property for **wildlife** values.
- ◆ **Watercourses** are particularly important and require special management.

SOIL: Maximum of 30-40% of bare ground exposed.

PASTURE: Tussock grasses dominate 60 - 70% of the pasture area.

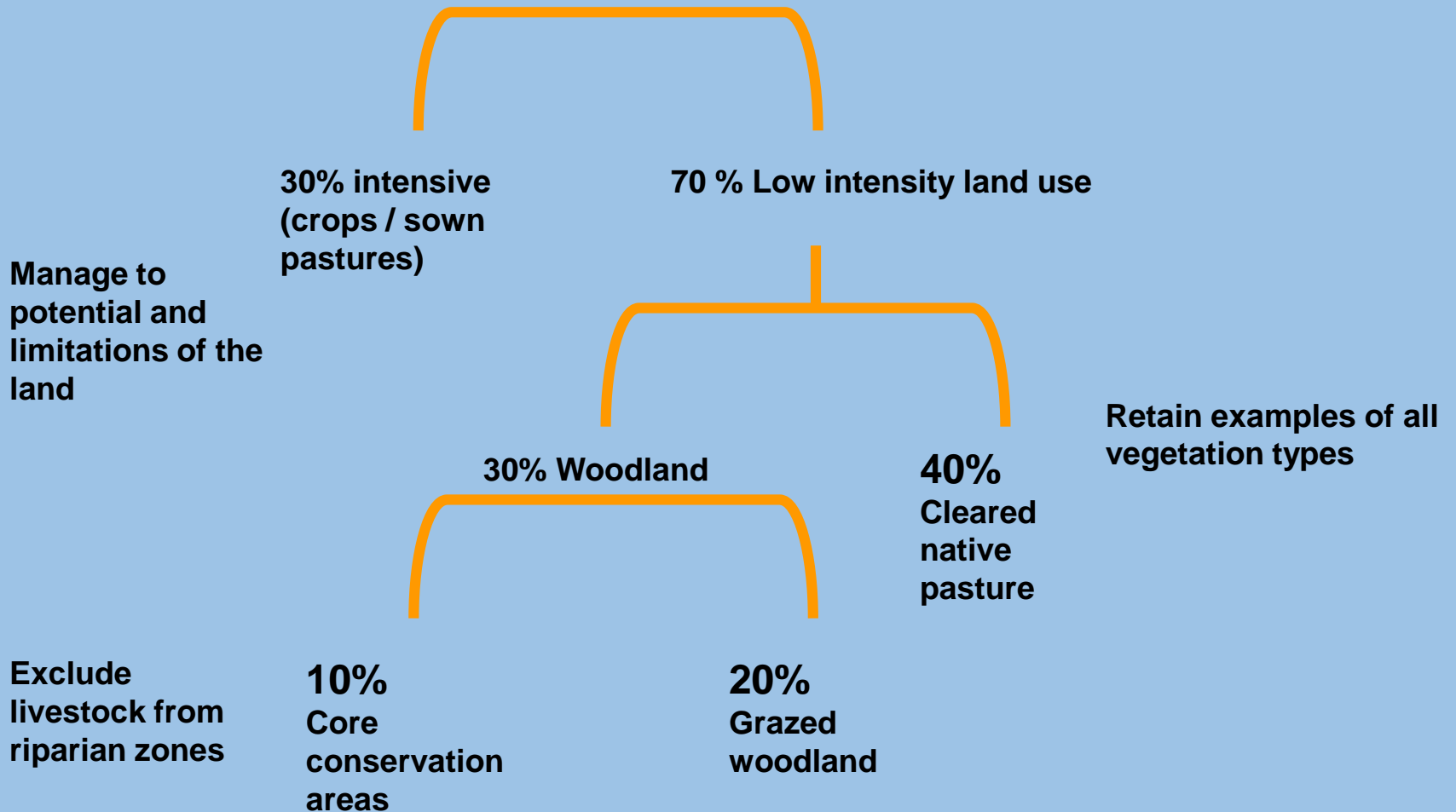
TREES: Minimum of 30% woodland or forest cover on properties.

TREES: Minimum viable woodland patches are 5-10 ha.

WILDLIFE: Manage at least 10% of the property for wildlife.

PASTURE: Limit sown pastures to a maximum of 30% of the property.

Thresholds represent maximum levels of development & use



Principles provide details of management and necessary modifications of thresholds for specific sites

Soil erosion: 60 - 70% cover → connectivity.

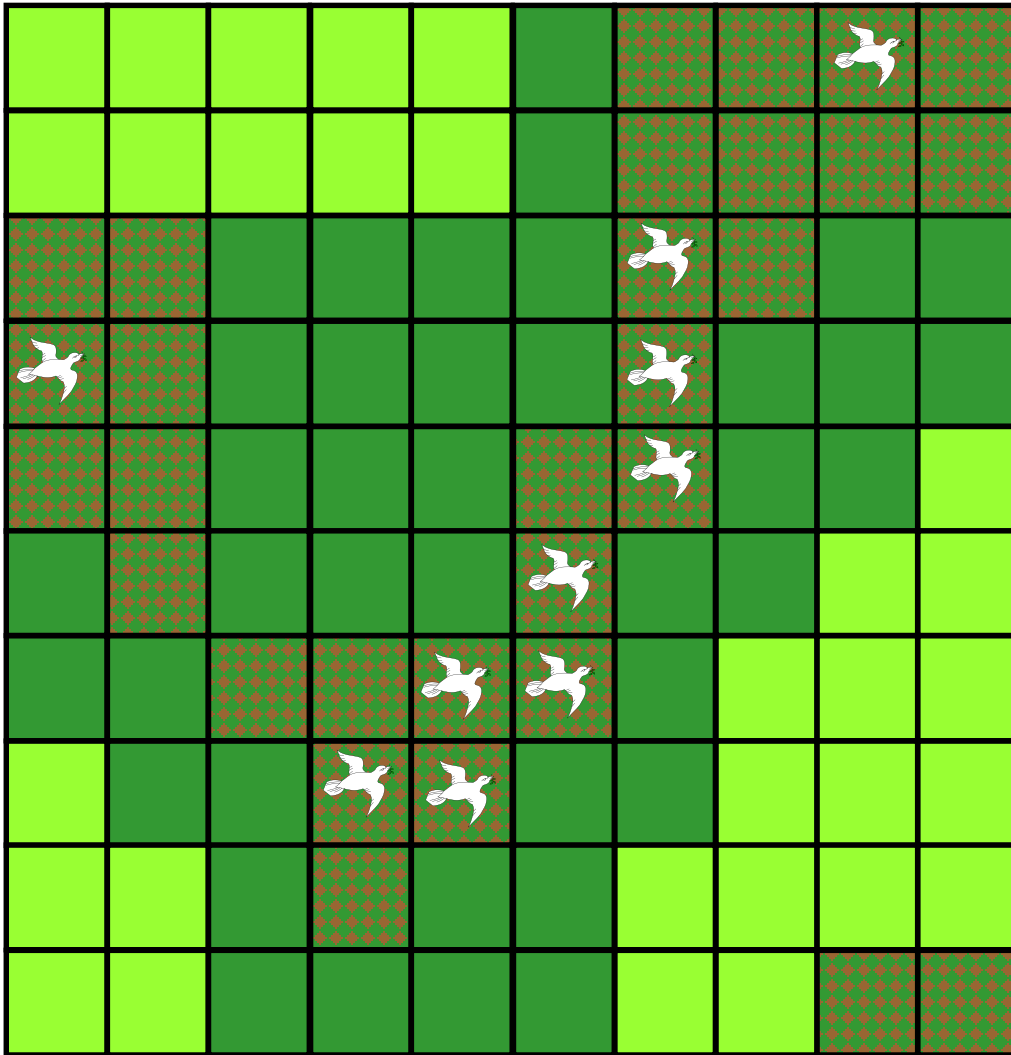
Animal production: 90% of landscape, 30% intensively.

Salinity: >30% of landscape under woodland.

Mobile woodland fauna: 30% habitat → connectivity.

Understorey species: 70% habitat → connectivity.

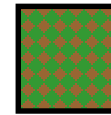
Sensitive fauna: Represented but +/- viable, depending on management and landscape layout.



70% Native grassy woodland



10% Woodland managed for wildlife

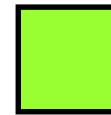


30% Woodland with native pasture understorey



40% Native pasture, not fertilized.

30% Intensive land-use



Sown pasture / fertilized pasture / cropping land.