

## Ecosystem accounting to inform decisions about forest management in the Central Highlands, Australia

2<sup>nd</sup> Forum on Natural Capital Accounting for Better Decision-making
22-23 November 2017
The Hague Netherlands

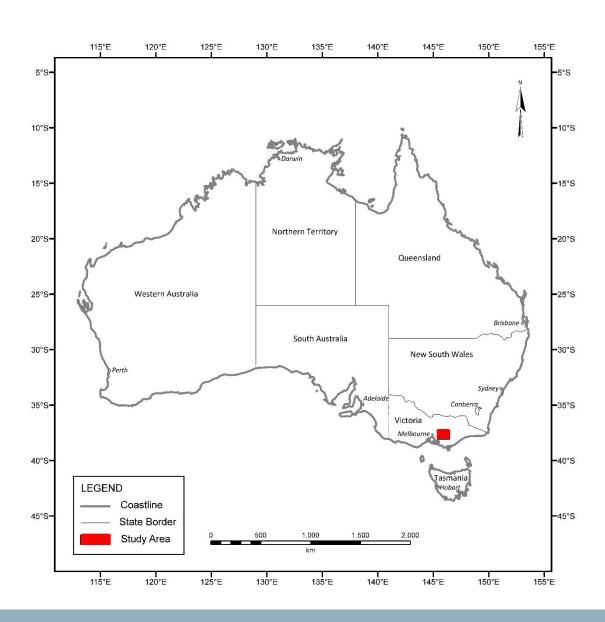


Dr. Heather Keith Research Fellow keather.keith@anu.edu.au Dr. Michael Vardon
Visiting Fellow
michael.vardon@anu.edu.au

Prof David Lindenmayer
Professor
david.lindenmayer@anu.edu.au



#### Central Highlands, Victoria, Australia



#### Mountain Ash forest





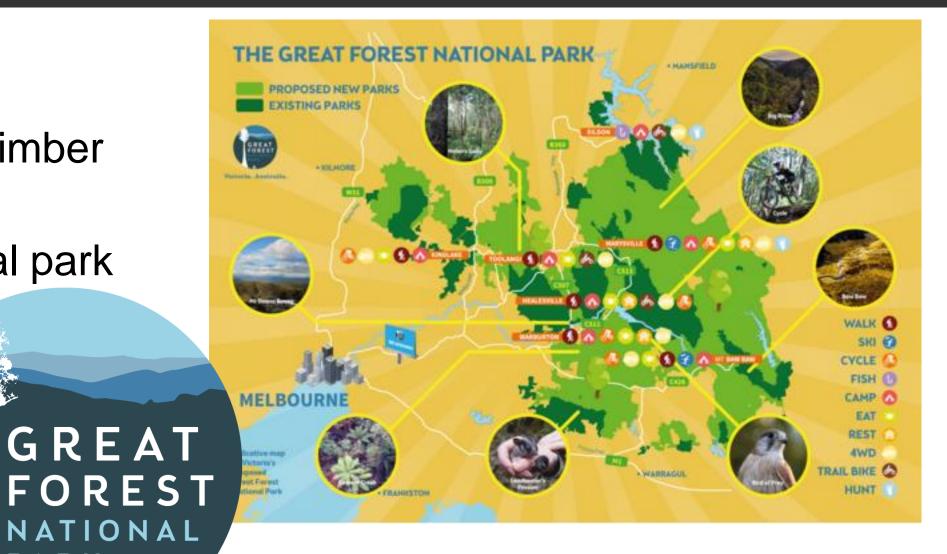
#### Use of forest

What level of timber production?

Size of national park

PARK

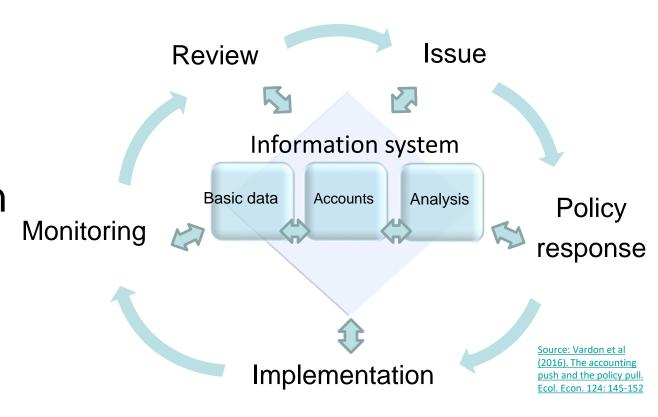
network?





### Accounts were designed and produced to feed into the decision-making process

- Covered environmental and economic information
- Integrated remotely sensed data with field data on carbon and biodiversity
- Accounts plus analysis and projections

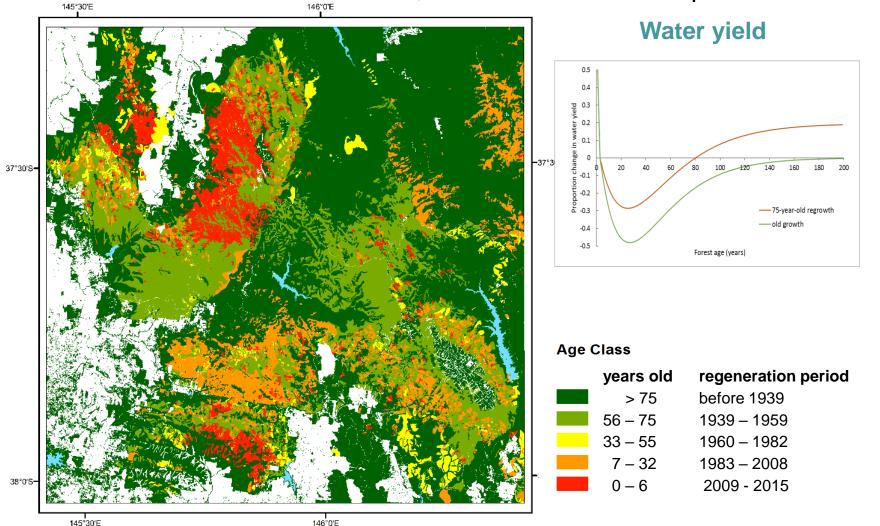




#### Ecosystem condition related to time since disturbance

Forest age – determined from stand-replacing events of wildfire and logging

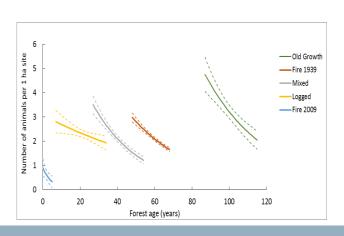
determines water, carbon stocks and sequestration and animal abundance



# sequestration 1200 Fire 1000

Carbon stocks and

#### Arboreal animal abundance

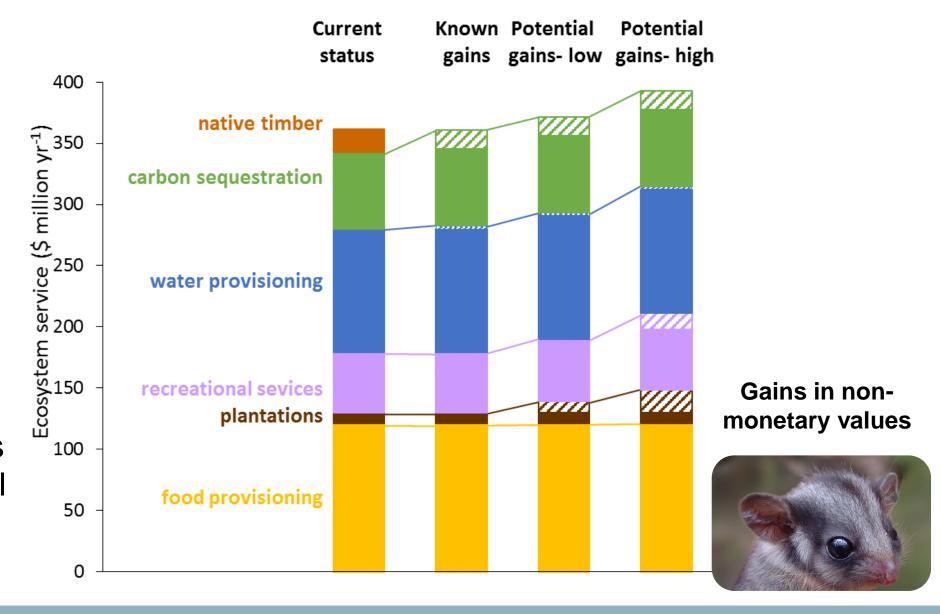




#### Trade-offs defined by ecosystem services

## Ceasing native timber harvesting increases:

- Carbon sequestration and water provisioning calculated – known gains
- Plantation timber provisioning and recreational services estimated – potential gains





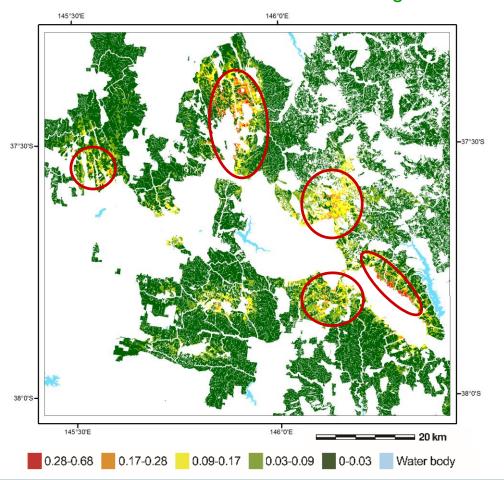
#### Trade-offs defined spatially

Interaction index of ecosystem services of water, carbon and timber provisioning.

'Hotspots' are the highest values for all ecosystem services.

**Trade-offs** are required when land uses conflict.

#### Native forest available for harvesting



Timber harvesting reduces ecosystem services for carbon storage and water yield





#### Communication

- <u>Draft Report</u> for discussion, June 2016
- Final Report and Appendices, July 2017
- Fact sheet
- Journal article
- Popular article
- Media reporting
- Radio interviews
- Briefing for Minister



#### Experimental Ecosystem Accounts for the Central Highlands of Victoria

Summary document for discussion



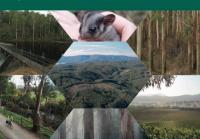


Version 1.0: 16 June 2016



Fenner School of Environment and Society
ANU College of Medicine, Biology and Environment.





Experimental Ecosystem Accounts

for the Central Highlands of Victoria

ecology & evolution

AR\* DOI: 10.1038/441

Ecosystem accounts define explicit and spat trade-offs for managing natural resources

Decisions about natural resource management are frequently complex and vexed, often leading to public policy compresses. Decisioned between embracemental and exceeding relicion carcates problems as assessing brade-first better different convent of the control of the control

coverent accounting has the patential to correlates as to pellop prices by a feature global season of a feature global season of the pellop prices by a feature global season of the pellop prices by a feature global season of the pellop prices by a feature global season of the pellop season of the pello

The future of Environmental Convention (SEEA) is internationally upone cannot for commissing environmental Convention (SEEA) in international quadred for combining environmental configuration. This system provides a standard model for the policy makener. This system provides a standard model for the policy control of the Convention (SEEA) and the concept of the convention of the conventi

stages at which quantification in physical and/or monetary can be applied to make compensation. In our be applied to make compensation, can be applied to make compensation in the destination of the control of the con

expension in occusion causing—
one in occupient is accounting to a comprehensive accounting by a classification of the comprehensive accounting to the comprehensive accounting management of the comprehensive accounting to the comprehensive accounting to the comprehensive accounting management accounting to the comprehensive accounting to the comprehensive accounting management accounting to the comprehensive accounting management accounting to the comprehensive accounting management accounting m

The Fenner School of Environment and Society, Australian National University, Cariberra, ACT 0200, Australia. \*e-mail: Heather Keithij-an

NATURE ECOLOGY & EVOLUTION | www.nature.com/hatecolevo

© 2017 Macmillan Publishers Limited, part of Springer Nature. All righ



#### Lessons and questions

- Accounts can be designed and produced to support particular decisions
- To make an impact accounts need to be interpreted, analysed and communicated beyond what is usually done by statistical agencies
- How to bring stakeholders along, especially stakeholders that stand to lose out?