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Ecosystem accounts for the Central Highlands of Victoria

Linking the production and use of accounts

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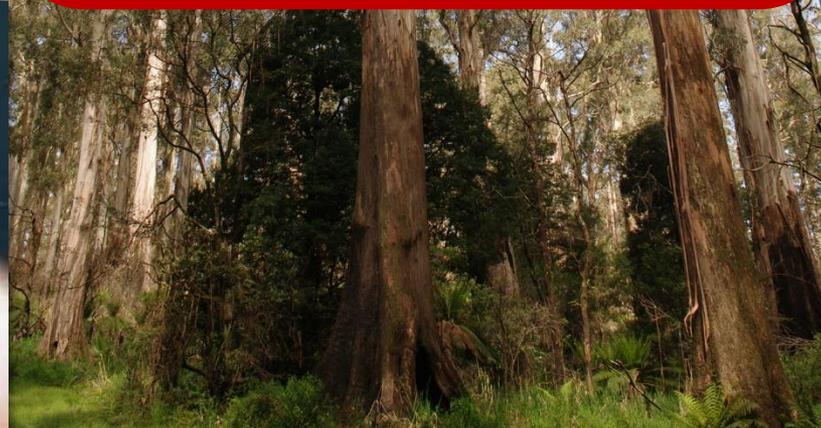
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Controversy over conflicting land uses



Conservation arguments about threatened species and aesthetic values are not changing people's minds.

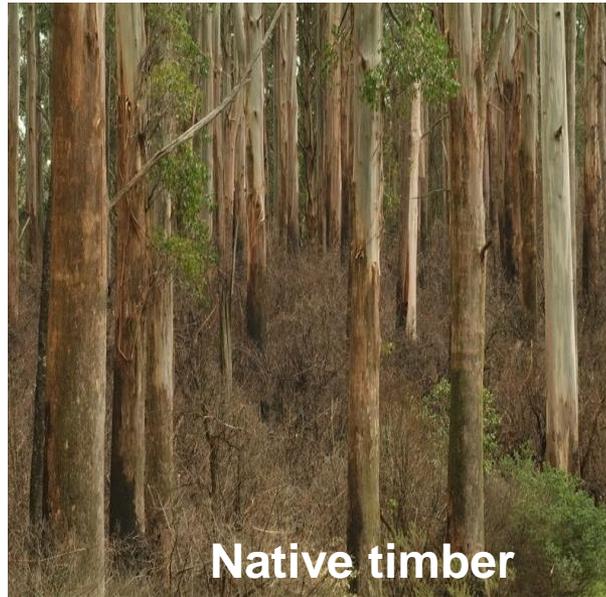




A range of natural assets



Water



Native timber



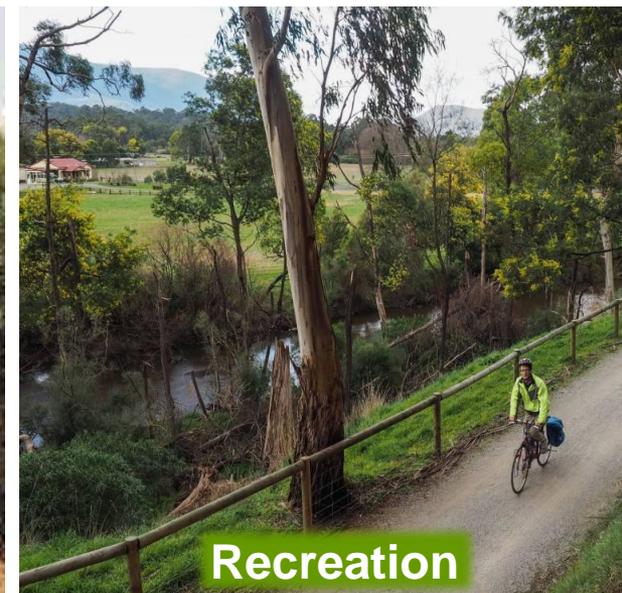
Agriculture



Carbon



Plantations

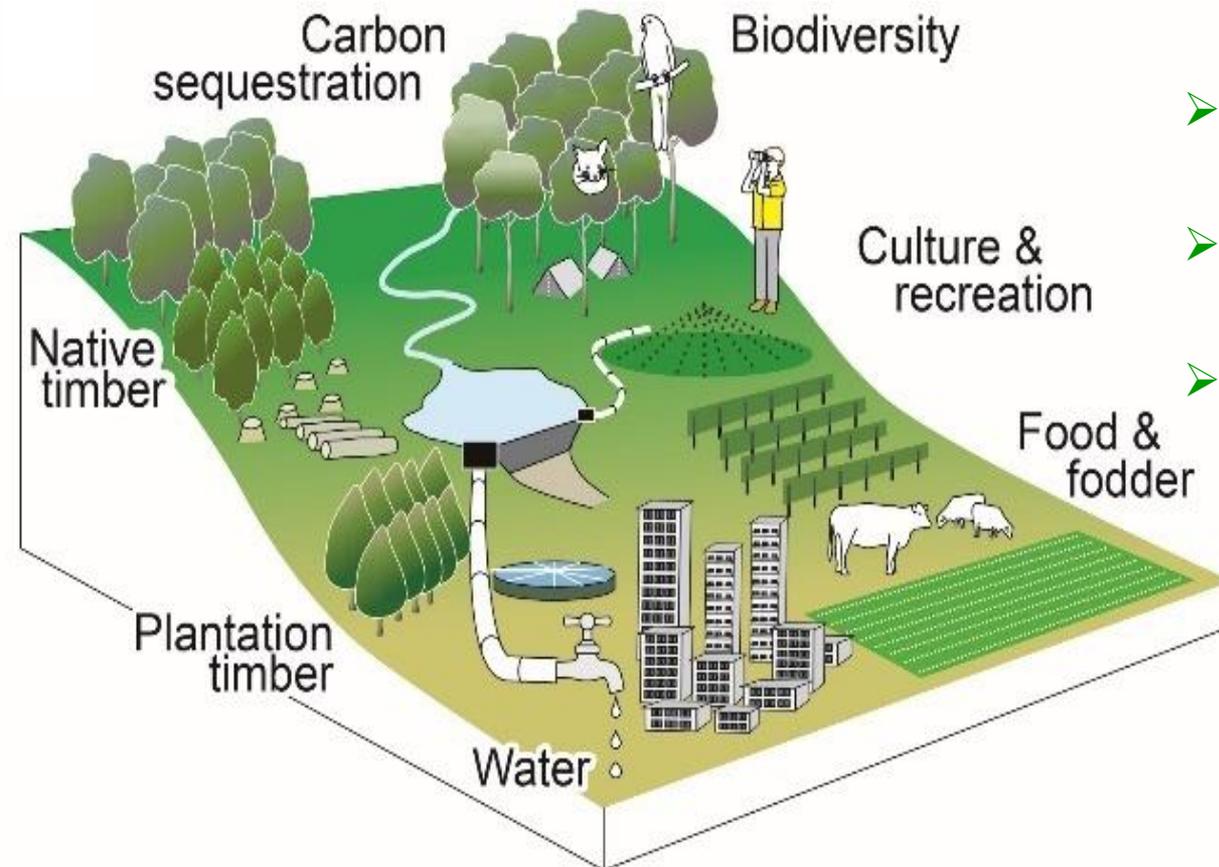


Recreation

Ecosystem accounting

Ecosystem accounting provides the evidence base to inform decision-making:

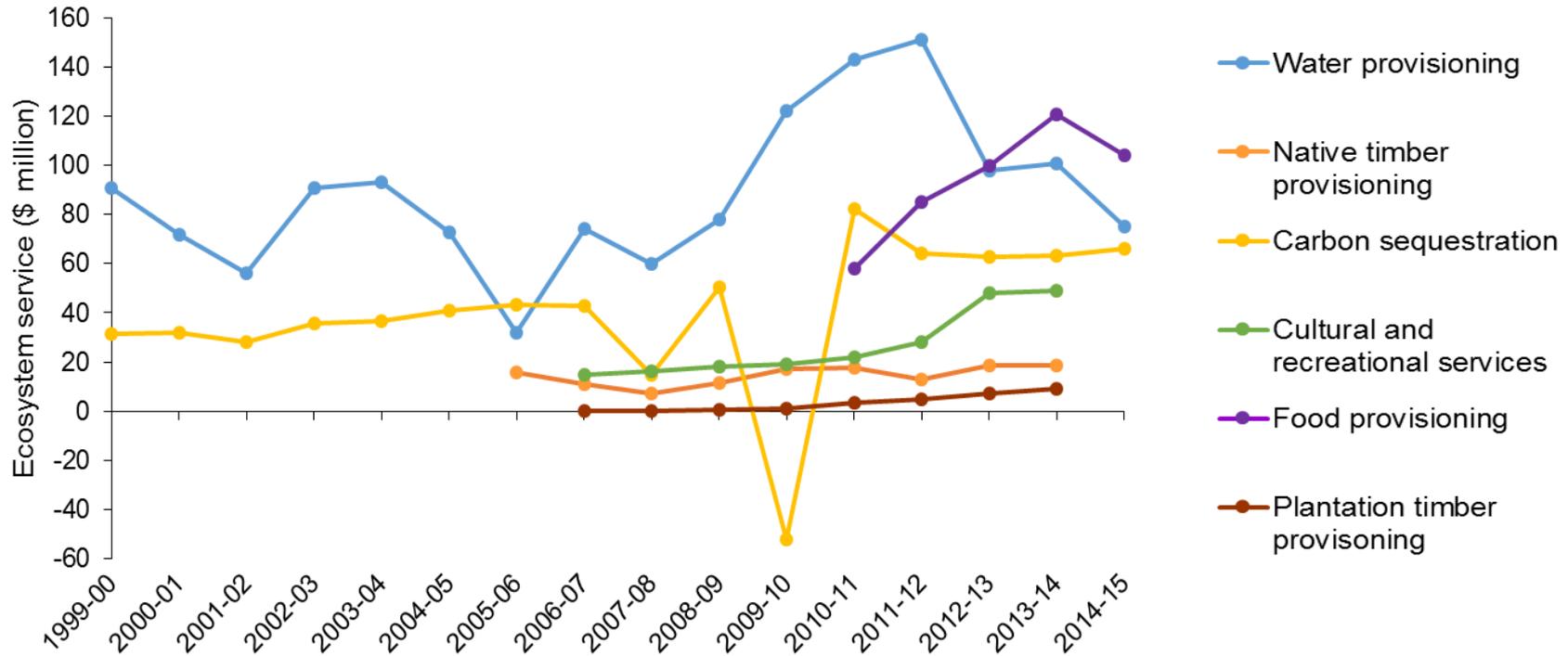
- Integrates all assets and services in a region
- Translates environmental values into economic terms
- Allows comparisons within a common framework
- Evaluates trade-offs explicitly and spatially





Accounts results:

1. Value of ecosystem services over time



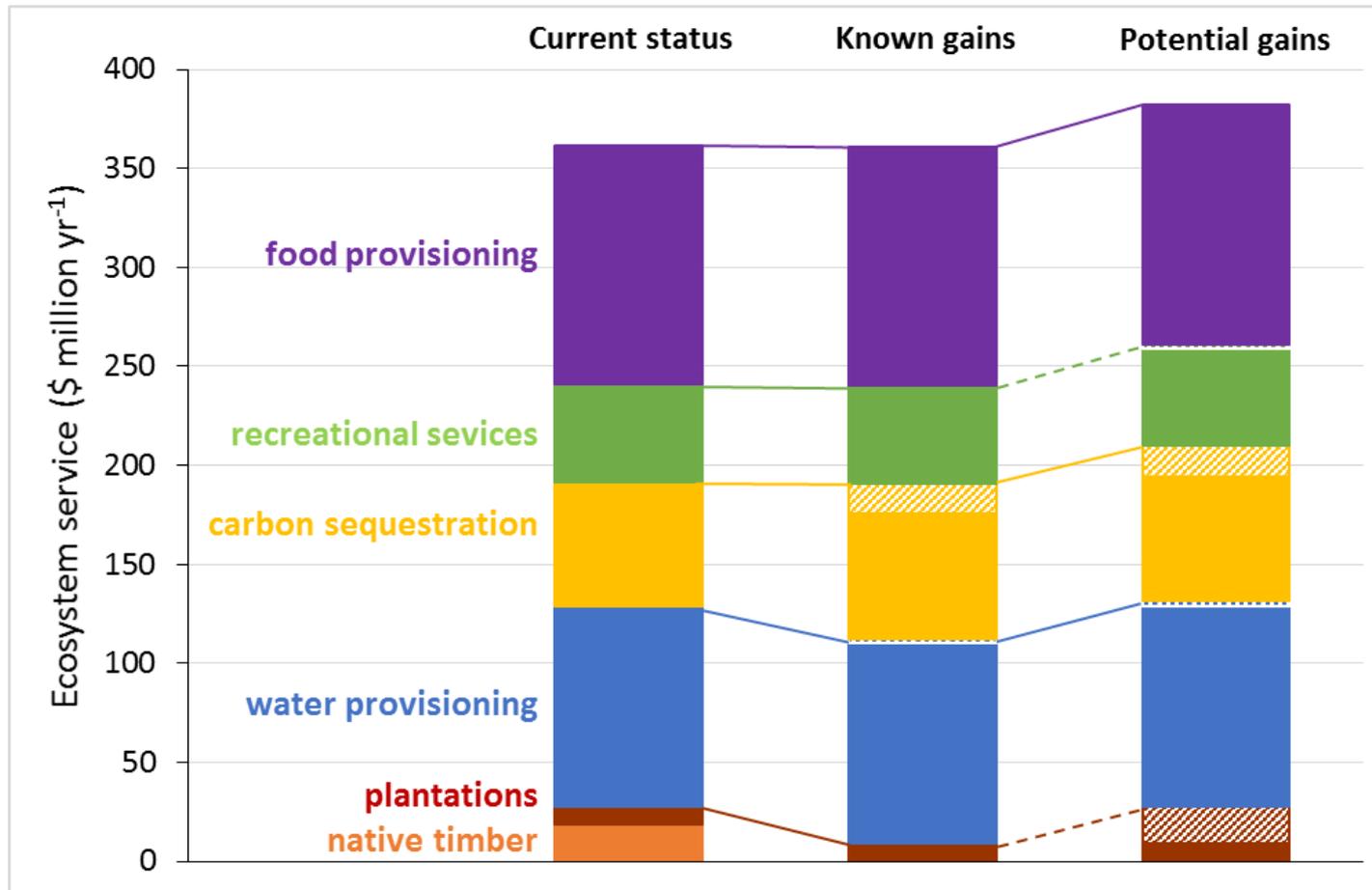
Ecosystem service	Valuation method	Description
Water provisioning	replacement cost	cheapest alternative source
Native timber provisioning	stumpage	timber sales less harvest & haulage
Carbon sequestration	payment for service	market based incentive system
Recreational service	unit resource rent	market price less costs of labour, inputs, capital
Food provisioning	unit resource rent	market price less costs of labour, inputs, capital
Plantation timber provisioning	unit resource rent	market price less costs of labour, inputs, capital

Accounts results:

2. Scenarios of changing land use

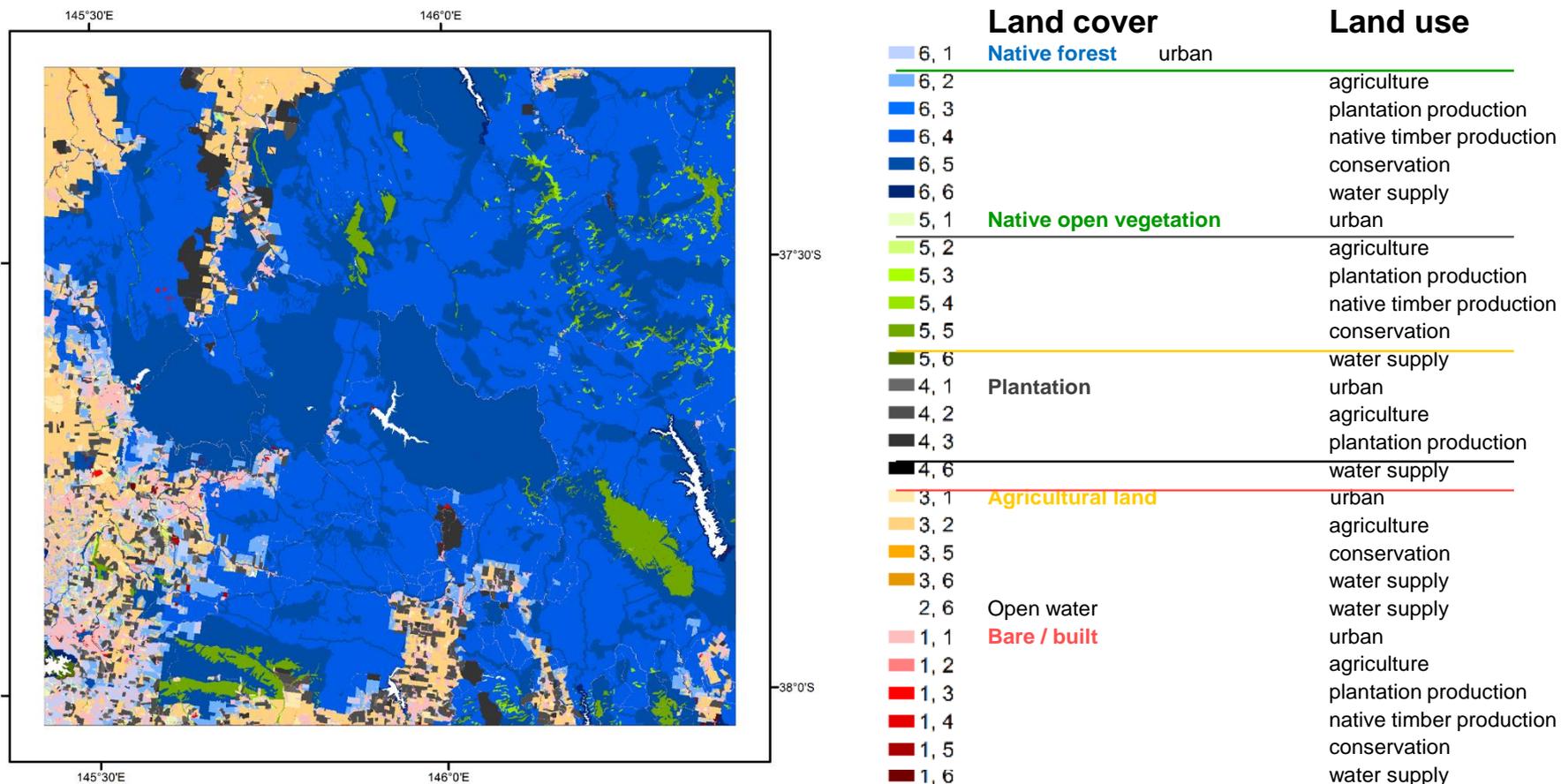
Ceasing native timber harvesting increases ecosystem services for:

- Carbon sequestration and water provisioning – Known gains
- Plantation timber provisioning and recreational services – Potential gains



Skills needed for accounting: 1. GIS

Spatial framework for the accounts includes land cover, land use, land management, disturbance history, boundaries for classification schemes



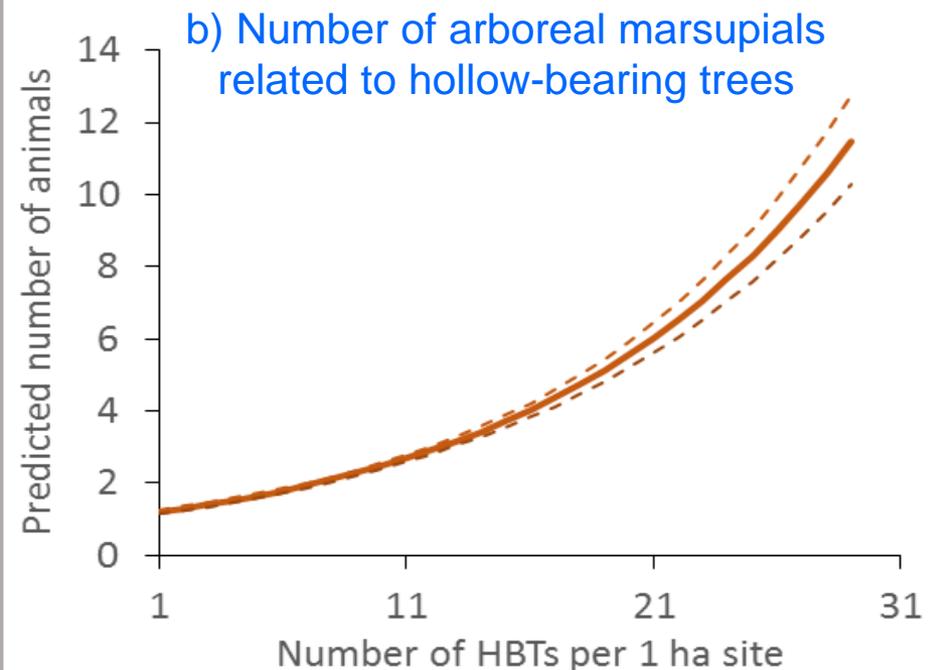
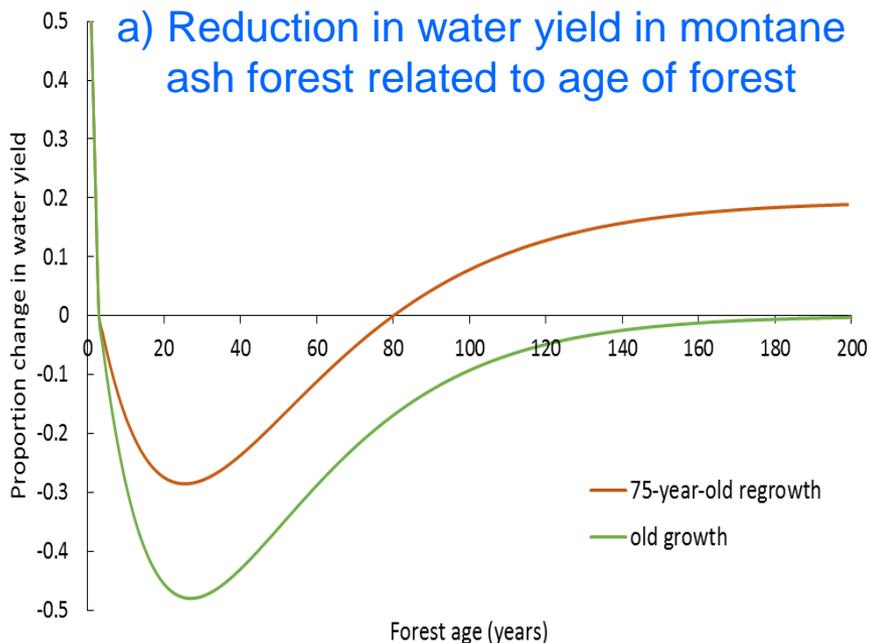
Skills needed for accounting:

2. Ecological

Ecological information needed:

- Long-term site data to quantify assets and change over time
- Experimental data to derive functions describing ecological processes
- Understanding of ecological processes and relationships
- Functions describing drivers of change including disturbance factors

Examples of ecological functions describing change over time:

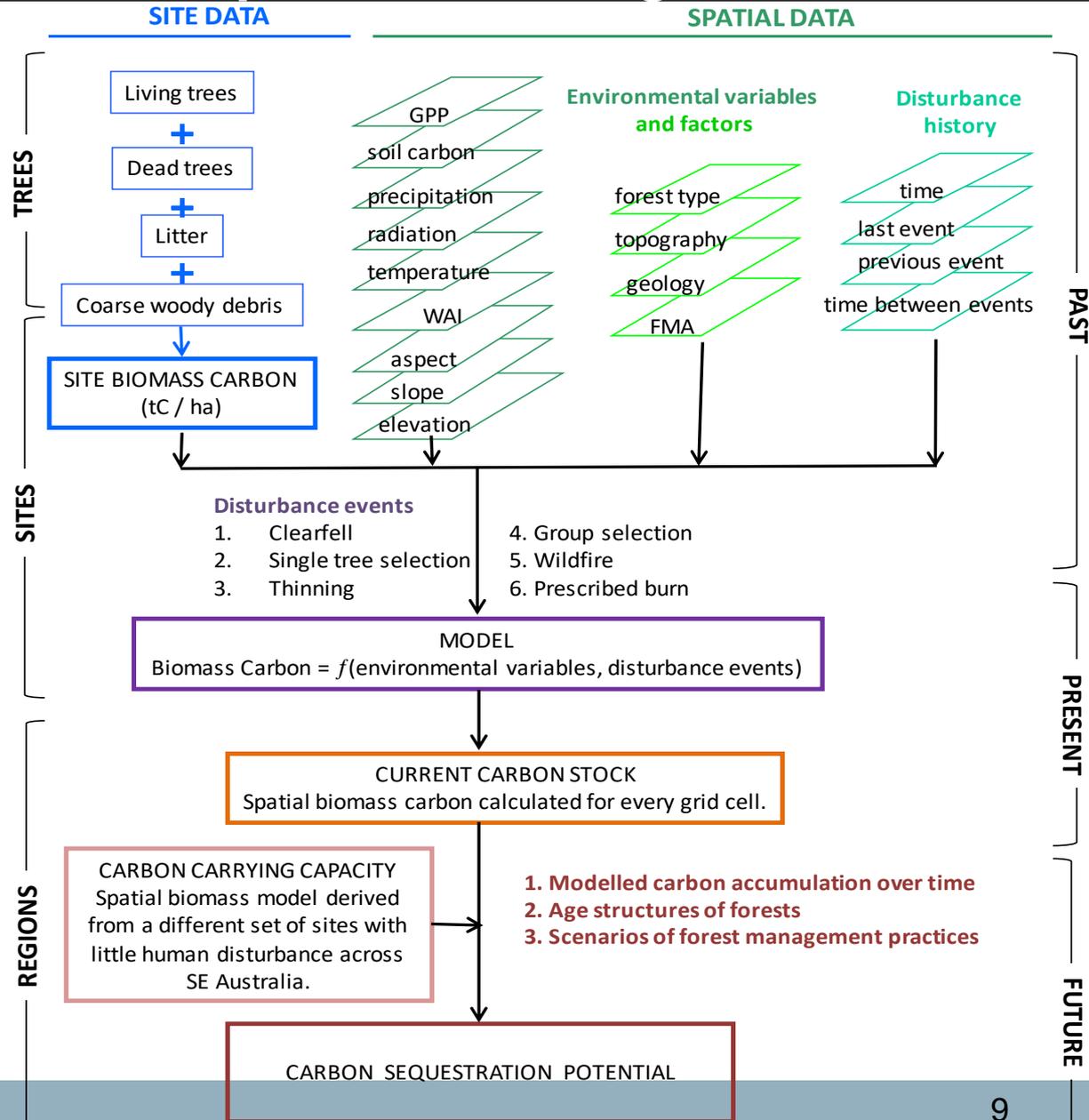




Skills needed for accounting: 3. Spatial modelling

Linking site and spatial data through ecological relationships across spatial and temporal scales.

Example:
Framework for scaling site measurements to spatial models, using the example of carbon stocks.



Skills needed for accounting:

4. Economic

Economic activities linking physical metrics to monetary metrics:

- Translating company financial accounts into the System of National Accounts
- Deriving economic methods for valuing ecosystem services

5. Collaboration

Collaboration of all these skills in an integrated manner, including feedbacks and revisions of the accounts.

1. Accounts need to be developed in a **consistent manner**, although some differences between regions and applications are necessary
2. Importance of the **accuracy and interpretation** of the underlying data
3. **Data needs include**: change in extent and condition over time, drivers of change, assessment of vulnerabilities and risks.
4. Need to generate a **greater understanding by users** of the information provided by accounts, and also the limitations
5. Accounts produced in **response to a policy question** are more likely to be accepted and used, but potentially constrained by time and scope
6. Need for research that is **independent of immediate use** to continually improve methods
7. Greater capacity will be achieved by collaborations of **research, production and use.**