IDEEA Group

Institute for Development of Environmental-Economic Accounting

ECOSYSTEM ACCOUNTING FOR NATURAL CAPITAL IN THE FORESTRY SECTOR

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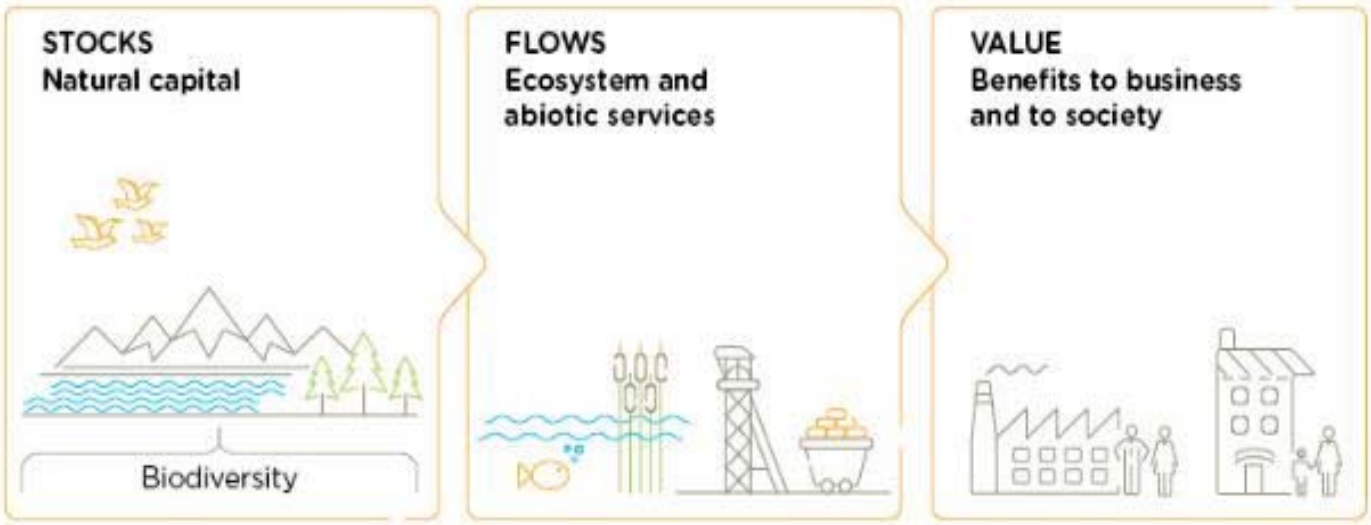
Presentation to the OESF Forest Ecosystem Services workshop

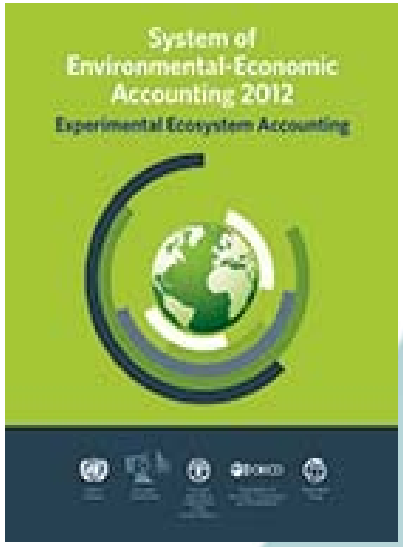
Christchurch, NZ

2 September, 2019

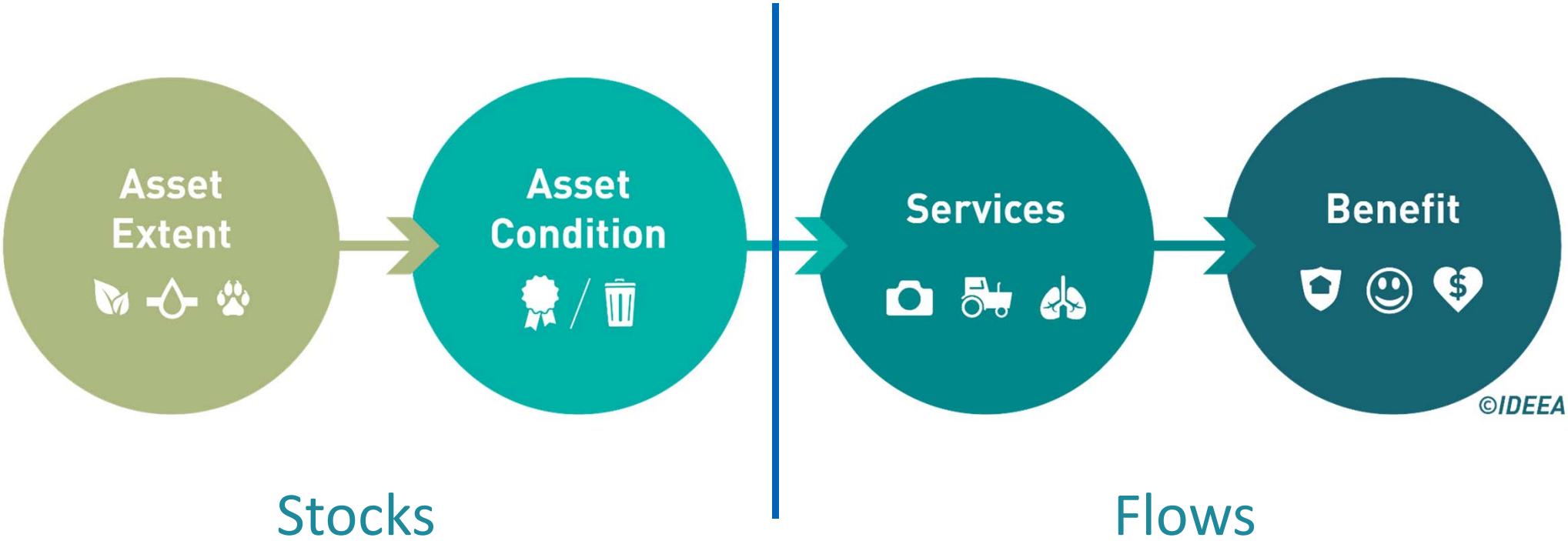
DEFINING NATURAL CAPITAL

Natural Capital
is the **stock** of renewable and non-renewable **natural resources**, (e.g. plants, animals, air water, soils, minerals) that combine to yield a **flow** of benefits to people





CORE ECOSYSTEM ACCOUNTING MODEL



ACCOUNTING FOR FORICO'S ECOSYSTEM ASSETS

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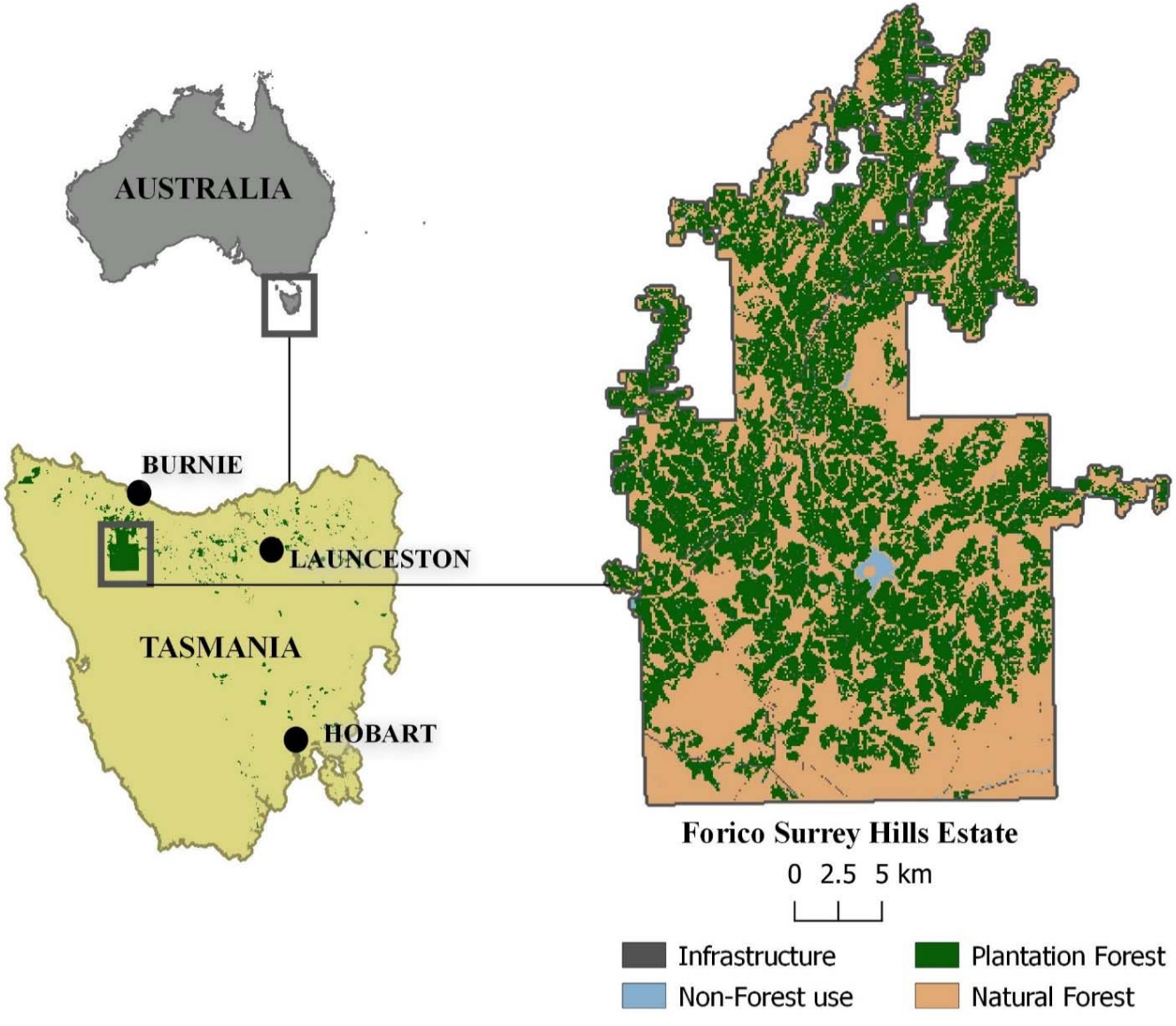
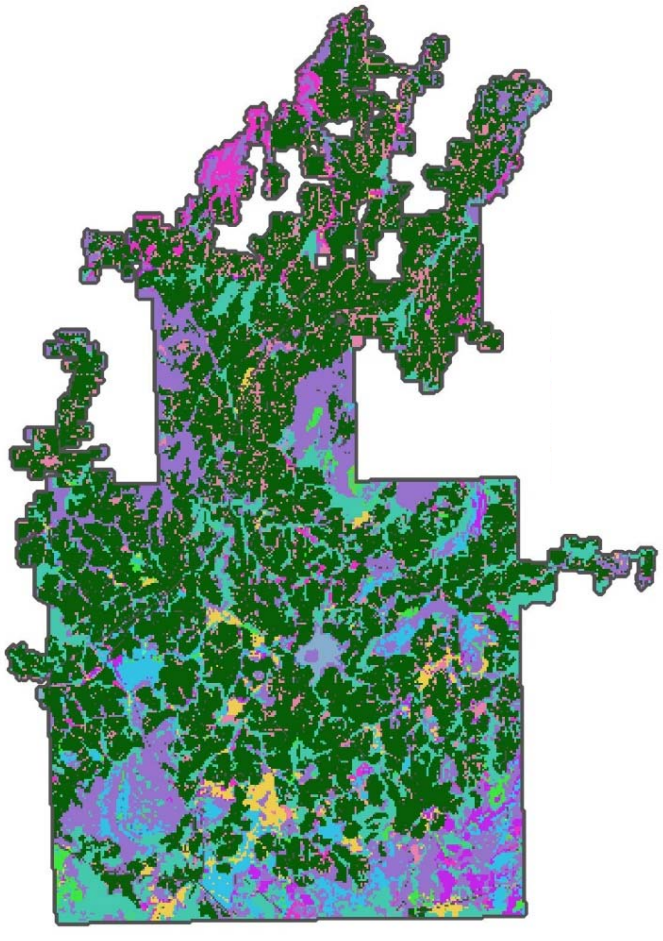
FORICO CONTEXT



Forest Management Zones (FMZ)

OVERLAYING ECOSYSTEM TYPES



Forico Surrey Hills Estate

0 2.5 5 km

Natural FMZ
- Agricultural, urban and exotic vegetation
- Dry eucalypt forest and woodland
- Highland and treeless vegetation
- Moorland, sedgeland, rushland and peatland
- Native grassland
- Non eucalypt forest and woodland
- Other natural environments
- Rainforest and related scrub
- Saltmarsh and wetland
- Scrub, heathland and coastal complexes
- Wet eucalypt forest and woodland

FMZ (non natural)
- Plantation
- Infrastructure
- Non-forest use

SPATIAL TO TABULAR ACCOUNTING

Reporting Units = FMZs

	Greater Surrey Hills		Other Forico Estate		Total Forico Estate	
	Area (ha)	%	Area	%	Area	%
1. Natural						
1.1 Formal Reserves						
1.2 Other - Natural Ecosystems						
All Natural						
2. Plantation						
2.1 Hardwoods						
2.2 Softwoods						
2.3 Not planted						
2.4 Failed Tree Farm						
All Plantation						
3. Non-Forest Use						
3.1 Firebreak						
3.2 Plantation Buffer						
3.3 Water body						
All Non-Forest Use						
4. Infrastructure						
4.1 Utility						
4.2 Quarries and gravel pits						
4.3 Roads						
All Infrastructure						
5. Other						
5.1 Agriculture						
5.2 Not elsewhere classified						
All Other						
Total						

DEFINING ECOSYSTEM ASSETS

Natural FMZ
- Agricultural, urban and exotic vegetation
- Dry eucalypt forest and woodland
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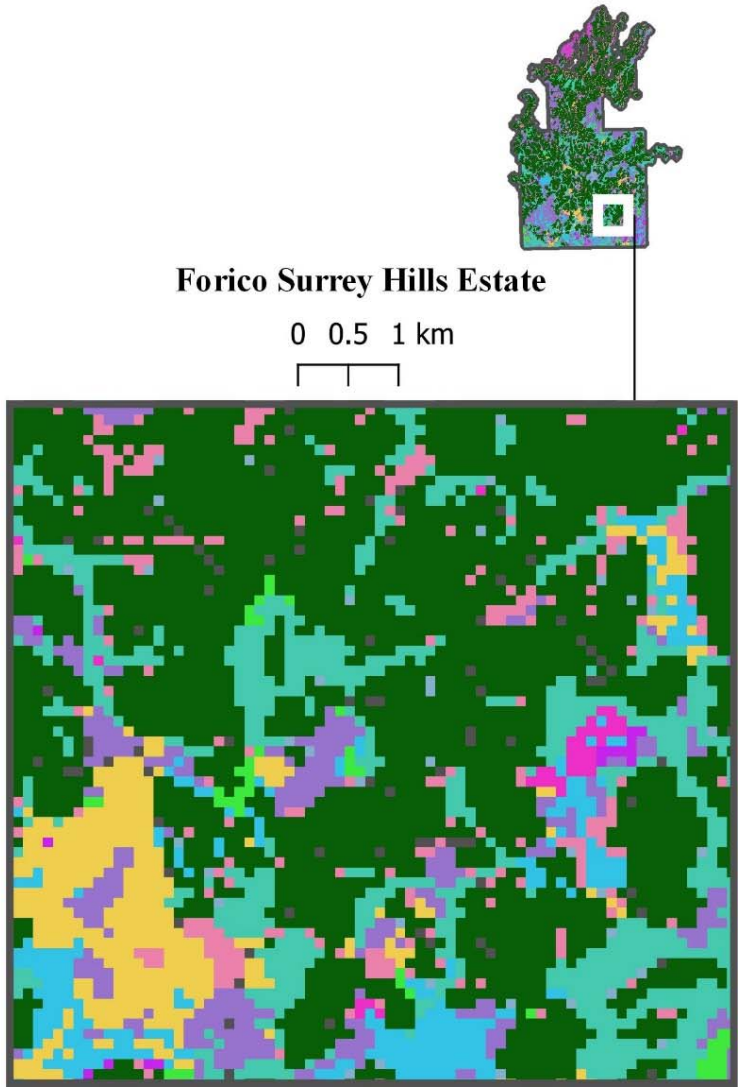
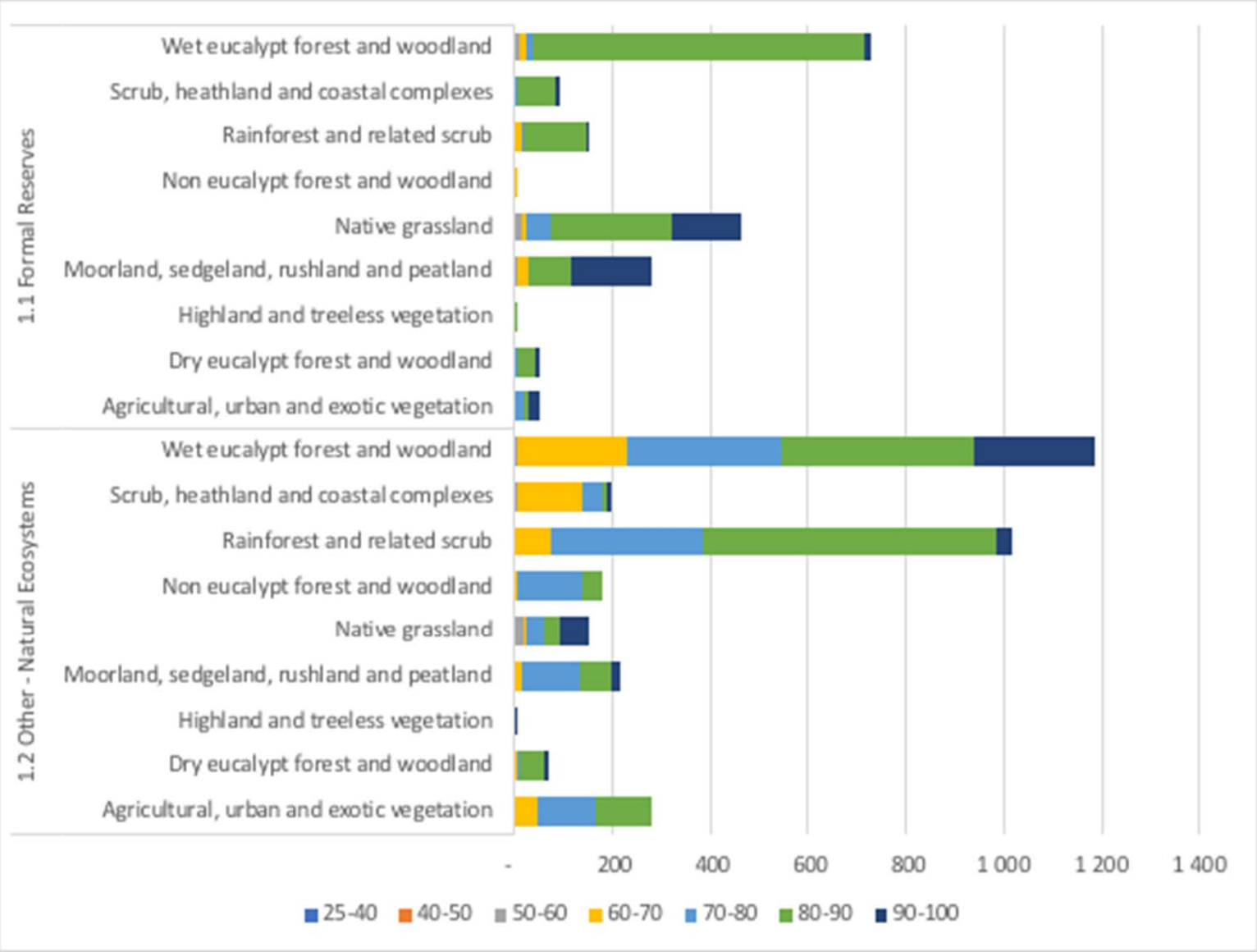


VEGETATION CONDITION ASSESSMENT (VCA) BY ECOSYSTEM TYPE, 2017



ACCOUNTING FOR ECOSYSTEM SERVICES

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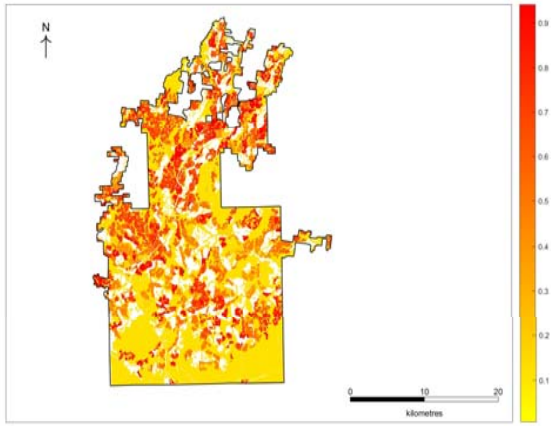
SPATIAL DISTRIBUTION OF ECOSYSTEM SERVICES

Carbon sequestration



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Water provisioning

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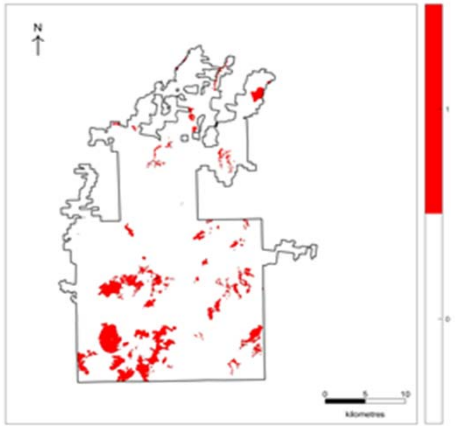
Habitat provisioning



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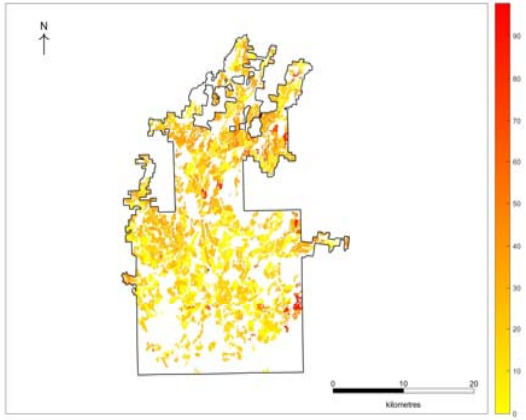
Timber provisioning



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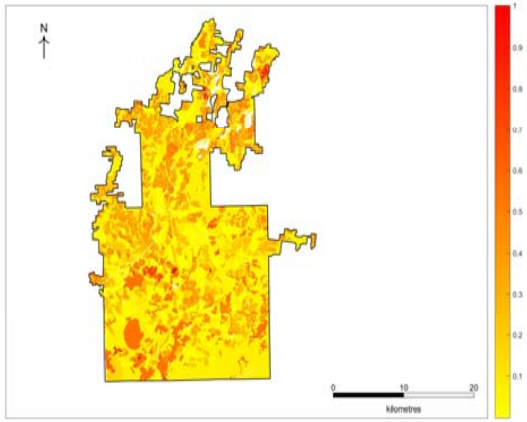
All services (normalised)



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ASSET TYPE LINKED TO SUPPLY OF SERVICES (PHYSICAL)

Class	Area 2017 (ha)	Timber 2017 (tonnes)	Carbon 2017 (tonnes)	Water 2015 (mL)	Habitat 2016 (ha)
Greater Surrey Hills					
1. Natural					
1.1 Formal Reserves					
1.2 Other - Natural Ecosystems					
Total					
2. Plantation					
2.1 Hardwoods					
2.2 Softwoods					
2.3 Not planted					
2.4 Failed Tree Farm					
Total					
3. Non-Forest Use					
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Total					
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4.1 Infrastructure					
4.2 Quarries and gravel pits					
4.3 Roads					
Total					
Greater Surrey Hills Total					

RECORDING FLOWS OF ECOSYSTEM SERVICES

	SUPPLY/ PRODUCTION			USE	
	Ecosystem assets			Internal	External
	Plantation	Native forests		Forestry business	Government / Household
		Eucalypt	Heathland		
Ecosystem service					
Timber	X			X	
Habitat	X	X	X		X
Carbon seq.	X	X	X		X
Recreation		X	X		X

WHY USE ECOSYSTEM ACCOUNTING?

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KEY APPLICATIONS FOR FORICO:
“MAKING EVERY HECTARE COUNT”

Using parts or all of the integrated ecosystem accounting data set (physical and monetary data) Forico envisages support for:

- Land management/trade-off analysis - optimisation assessment
- Stakeholder engagement – recognising spatial context and multiple values
- Non-financial reporting – e.g. corporate sustainability reports; certification (FSC); State of the Forests reporting
- Identify new revenue opportunities: Environmental markets (carbon, habitat management); Green finance

Other options include scenario and risk analysis (e.g. impacts of climate change); supply chain analysis – ecosystem “footprints”; integrated spatial planning: e.g. with agriculture; social cost-benefit analysis

APPLICATIONS BEYOND AN INDIVIDUAL BUSINESS

Forest management and regulation

- State of the Forest reporting (Montreal indicators)
- Socio-economic impact of policies
  - Employment / Incomes
  - Environmental performance and co-benefits
- Policy design and assessment
- Linking micro and macro scales
- Landscape management – e.g. agro-forestry, water catchments

Finance and environmental markets

- Payments for ecosystem services
- Green bonds
- Independent forest valuations

FINAL THOUGHTS

- National accounting principles of SEEA & SNA are relevant recording approaches for integrating environmental/ecological data at corporate level
- Need to move from corporate reporting & sustainability focus to an operations & finance focus – accounting principles are fundamental to this shift
- Focus on natural capital stocks and dependencies rather than societal benefits/impacts is needed to make the connection to "what's in it for me"
- Need engagement with corporate accountants (CFO etc) to talk through details of the ecosystem accounting approach

"…the experience has proven the value and power of ecosystem accounting as an essential management and governance tool for Forico." (Forico, 2018)

https://www.ideeagroup.com/accounting-for-ecosystem-services-in-the-forest-sector-forico-tasmania/

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Accounting for ecosystem outcomes

www.ideeagroup.com