CRC TIME NATURAL CAPITAL ACCOUNTING SYMPOSIUM

17 July 2024

CRC TiME
Transformations in Mining Economies

ACKNOWLEDGEMENT OF COUNTRY

CRC TiME acknowledges Traditional Custodians throughout Australia and their continuing connections to their lands, waters and communities.

We pay our respects to all First Nations peoples and communities, and to Elders past and present.

Artwork by **Acacia Collard.**

CRC TiME
Transformations in Mining Economies

Opening Remarks

Dr Libby Pinkard, CSIRO

NCA Forum

Libby Pinkard, Research Director CSIRO

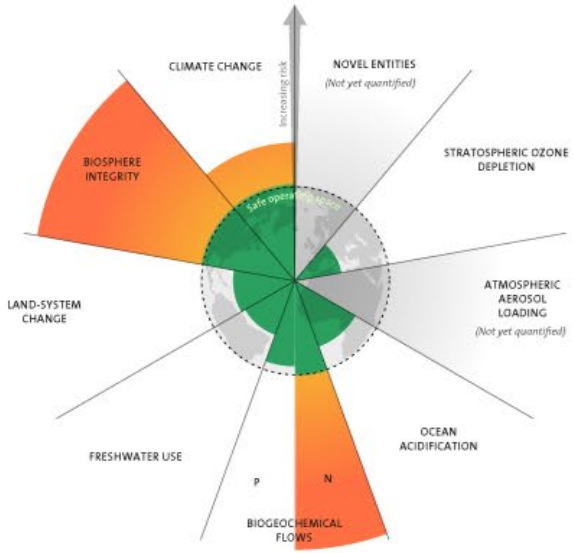
Outline

- A problem
- A timeline
- A question
- An opportunity

A problem

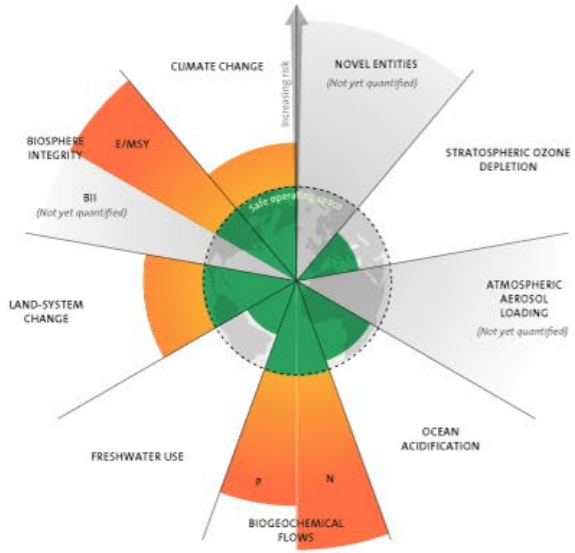
- Crossing boundaries increases risk of large-scale abrupt or irreversible environmental changes

2009



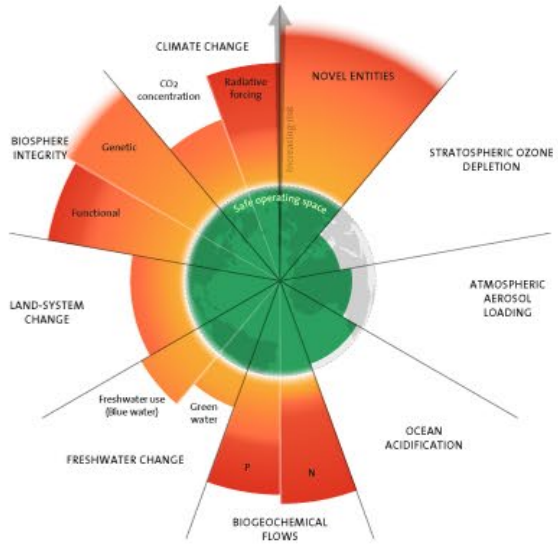
3 boundaries crossed

2015



4 boundaries crossed

2023



6 boundaries crossed

Source: Stockholm Resilience Centre 2023

A timeline

Environmental

Environmental economic

A question

- Alignment with existing financial reporting
  - NC balance sheet and income statement
  - Explicit representation of NC values
  - Stocks, flows, assets
- Systematic and structured approaches
  - Tracks change over time
  - Beyond benchmarking/compliance
  - Improved management outcomes
- Materiality assessment
  - Impacts and dependencies
  - Managing risks
  - Identifying opportunities
  - Increasing efficiencies

How does NCA differ from other environmental reporting?

The opportunity

- Use NCA to embed nature into business and management decisions and practices
- Industry-wide approach
- Nature knows no boundaries
  - Systems approach
  - Working across sectors
  - Working with communities
- Supporting energy and nature positive transitions

Importance of Natural Capital

Lisa Bambic, DCCEEW

Australian Government

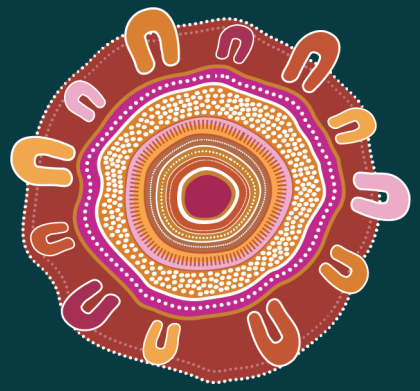
Department of Climate Change, Energy, the Environment and Water

Importance of Natural Capital

Natural capital Accounting Symposium

Lisa Bambic, Director Environmental Economic Accounts, Environment Information Australia

17 July 2024



We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.

National Vision

The Australian community understands the environment's contribution to our quality of life, and its condition and value are accounted for in decision making for a prosperous and healthy society.

Environmental Economic Accounting: A common national approach

Contact us

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Introduction to Natural Capital Accounting

Dr Tony O'Grady, CSIRO

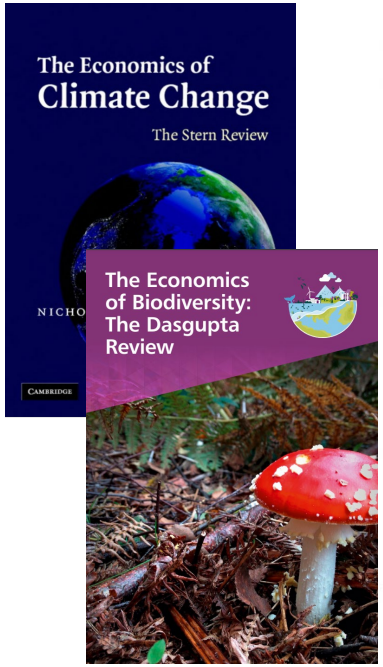
Australia's National Science Agency

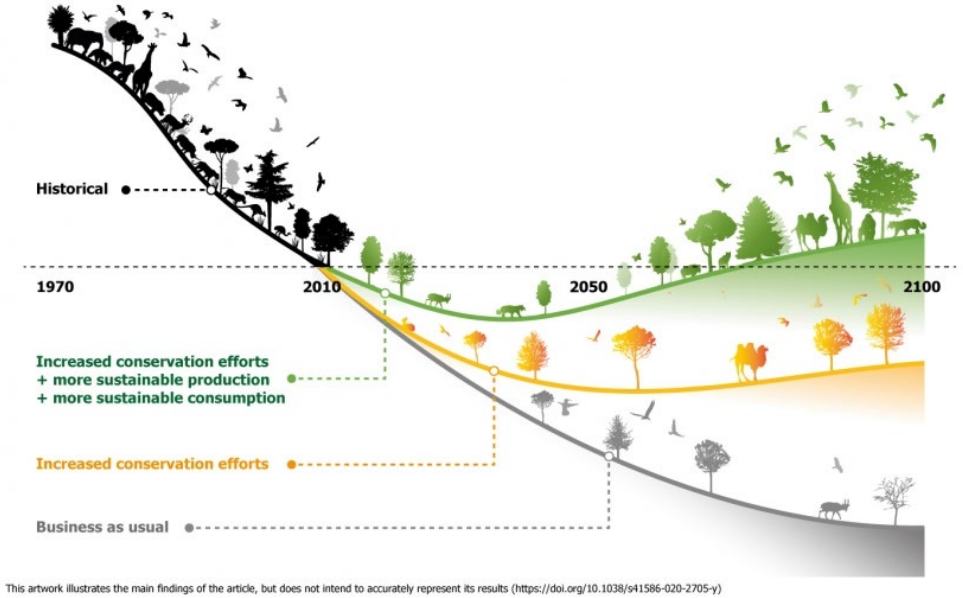
Natural capital accounting in the mining sector:
Concepts

Anthony O'Grady

NCA Symposium, 17 July 2024

Nature Matters





Leclère, D., et al. (2020). Bending the curve of terrestrial biodiversity needs an integrated strategy. *Nature, 585**, 551-556.***

Top 10 risks

- Extreme weather events
- Critical changes to Earth ecosystems
- Biodiversity loss and Ecosystem collapse
- Natural resource shortages
- Misinformation and disinformation
- Adverse outcomes of AI technologies
- Involuntary migration
- Cyber insecurity
- Societal polarization
- Pollution

Definitions

Natural capital:

The stock of renewable and non-renewable natural resources (e.g. soil, water, plants, ecosystems) that combine to yield a flow of benefits to society
(Capitals Coalition 2016)

Biodiversity:

The variability of among living organicism's from all sources including, inter alia terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part. This includes diversity within species, between species and of ecosystems
(CBD)

Nature:

The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment
(TNFD 2023)

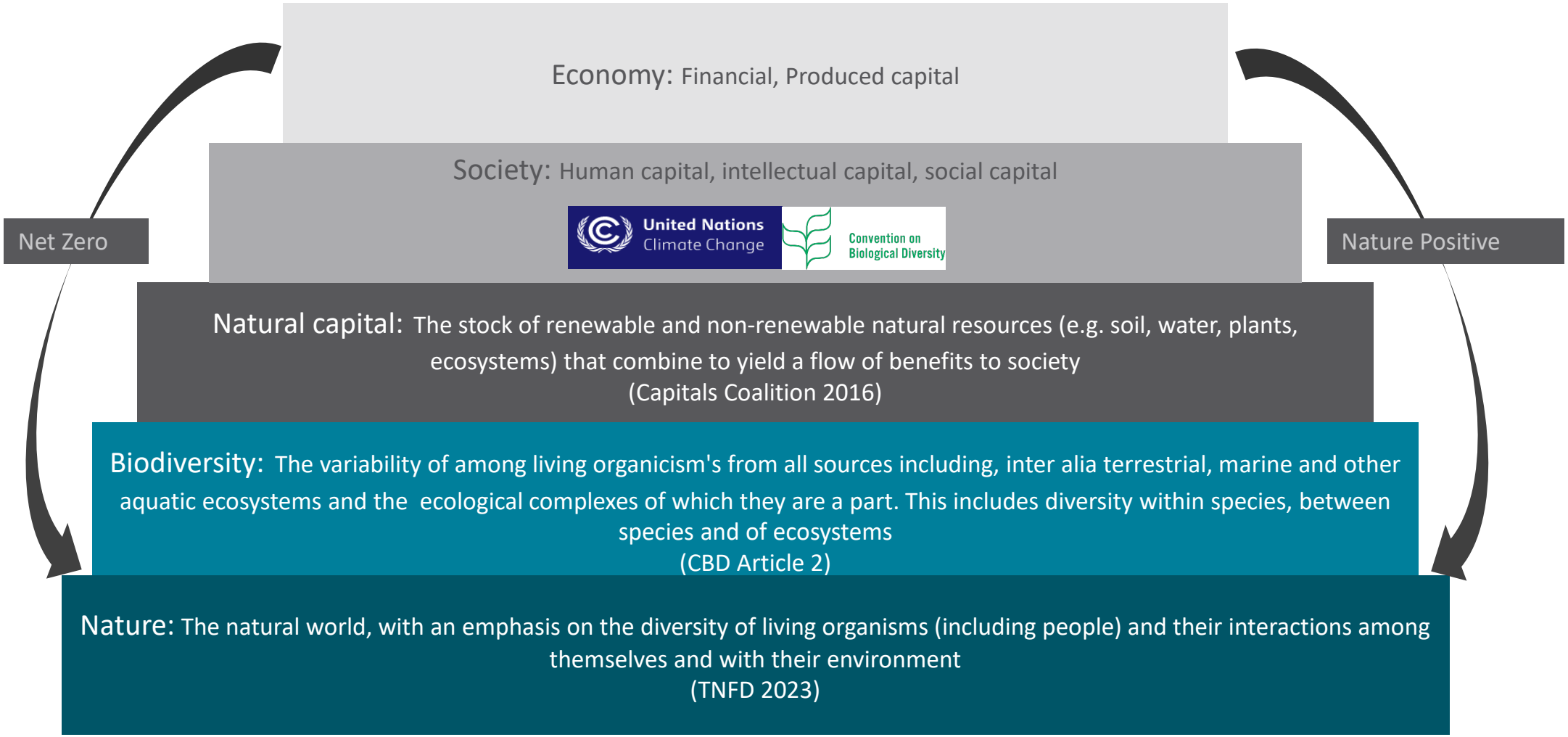
Nature-based solutions:

Actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively adaptively to provide both huma wellbeing and biodiversity benefits
(IUCN 2020)

Nature Positive:

The ambition to halt and reverse nature loss by 2030 against a 2020 baseline and achieve full recovery by 2050
(NaturePositive.org)

Definitions

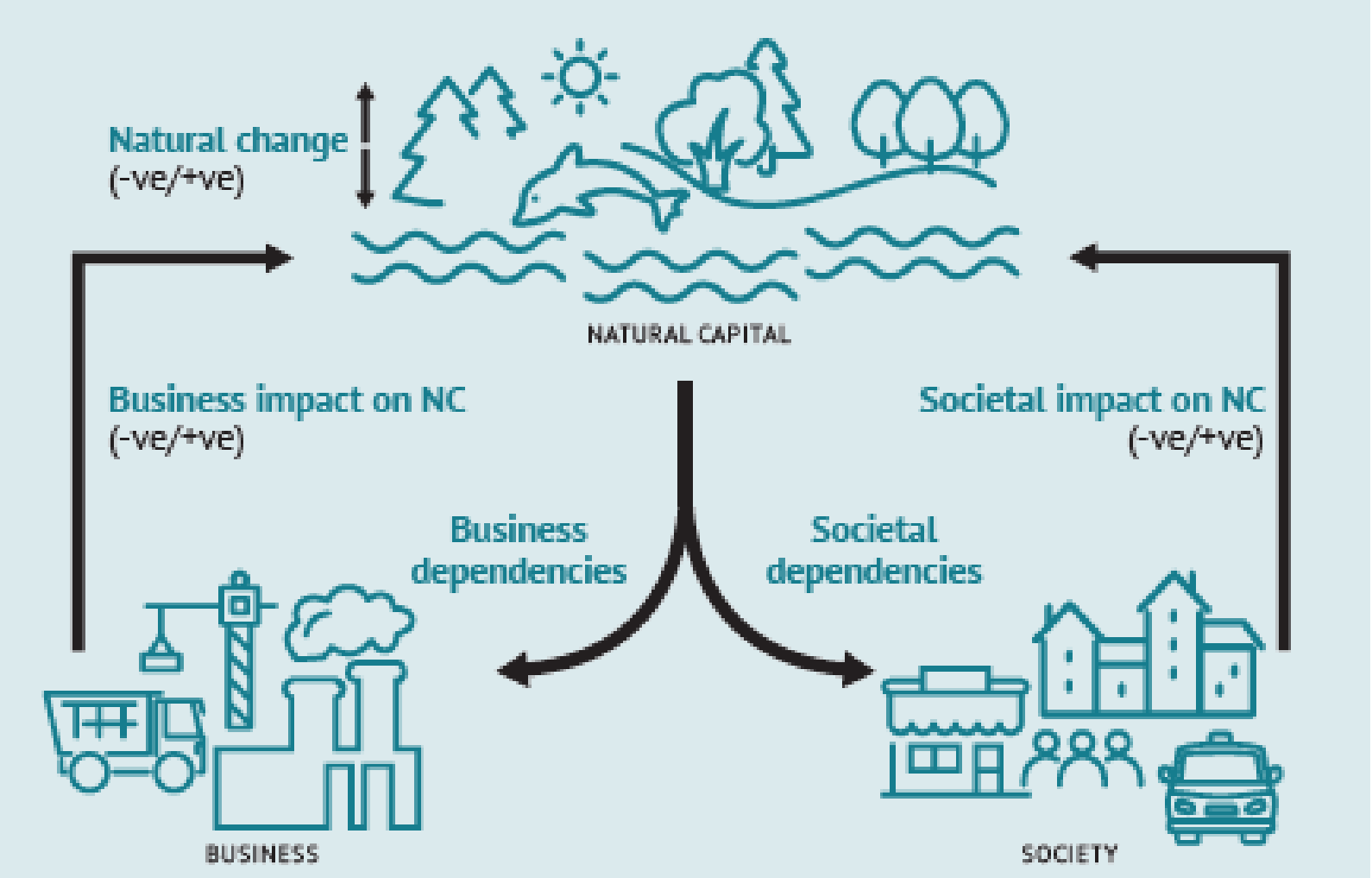


Natural Capital

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

Natural capital accounting is the process of calculating the stocks and flows of natural resources and services in a given ecosystem or region.

Natural capital assessment



Natural capital accounting

Natural capital confusion

CSIRO

Global Context for Financial Disclosures

Dr Emma Gagen, ICMM

Indigenous Perspectives on Natural Capital Accounting

Heidi Mippy, ARC Training Centre for Healing Country

Lessons from the Beenup Case Study

Professor Owen Nevin, WABSI

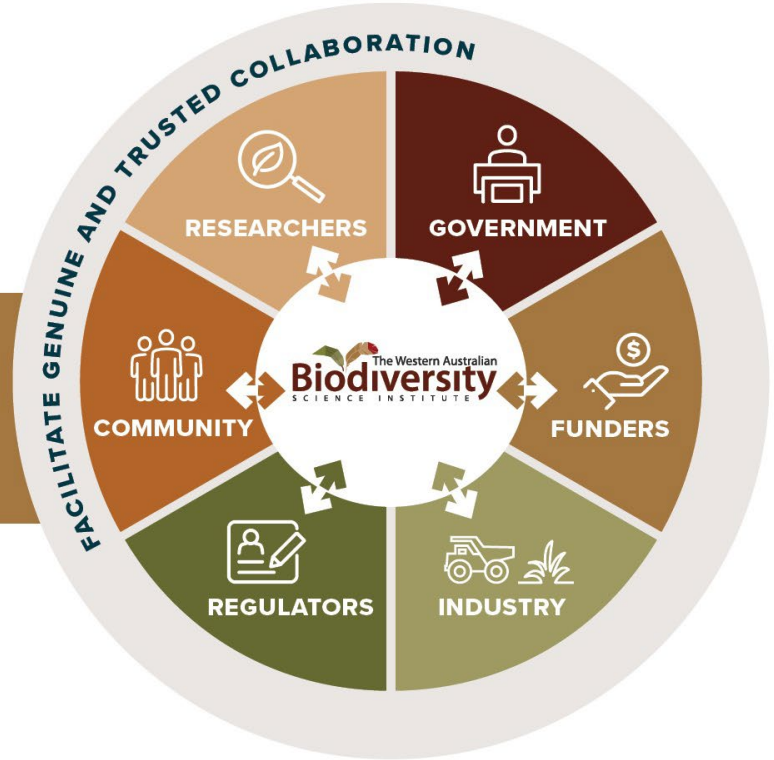
Lessons from the Beenup Case Study

Prof Owen T Nevin, Chief Executive Officer WABSI

Anniversary Visiting Professor of Conservation Biology, University of Cumbria, UK
Adjunct Professor of Conservation Biology, CQUniversity Australia

Who we are

- We are an independent, collaboration mechanism.
- We facilitate end user driven, relevant research.



CSIRO

Curtin University

ECU Australia Edith Cowan University

Murdoch University

The University of Western Australia

Western Australian Museum

Department of Biodiversity, Conservation and Attractions

Department of Primary Industries and Regional Development

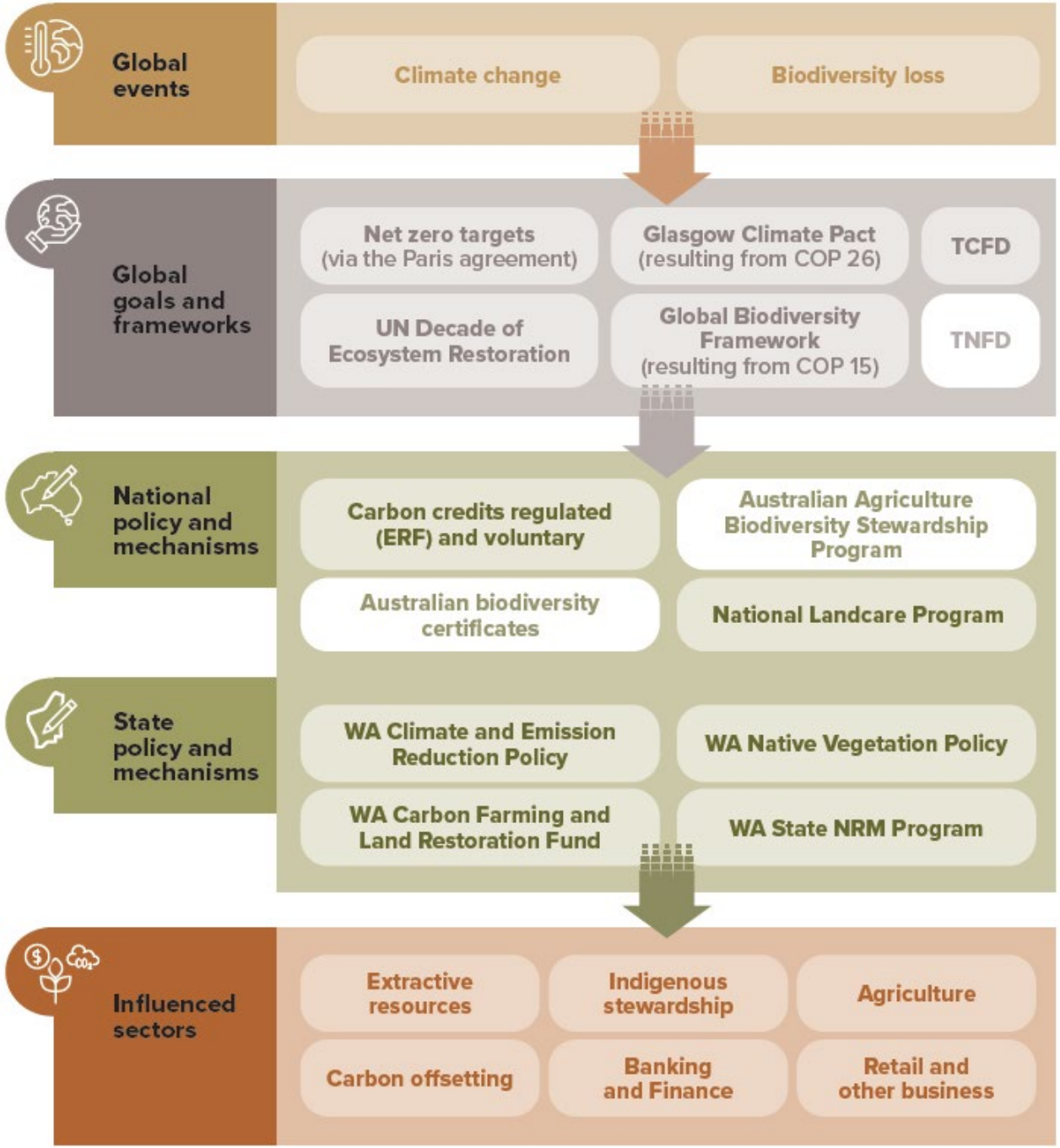
Government of Western Australia
Department of Jobs, Tourism, Science and Innovation

Government of Western Australia
Department of Mines, Industry Regulation and Safety

Government of Western Australia
Department of Water and Environmental Regulation

Global shift →

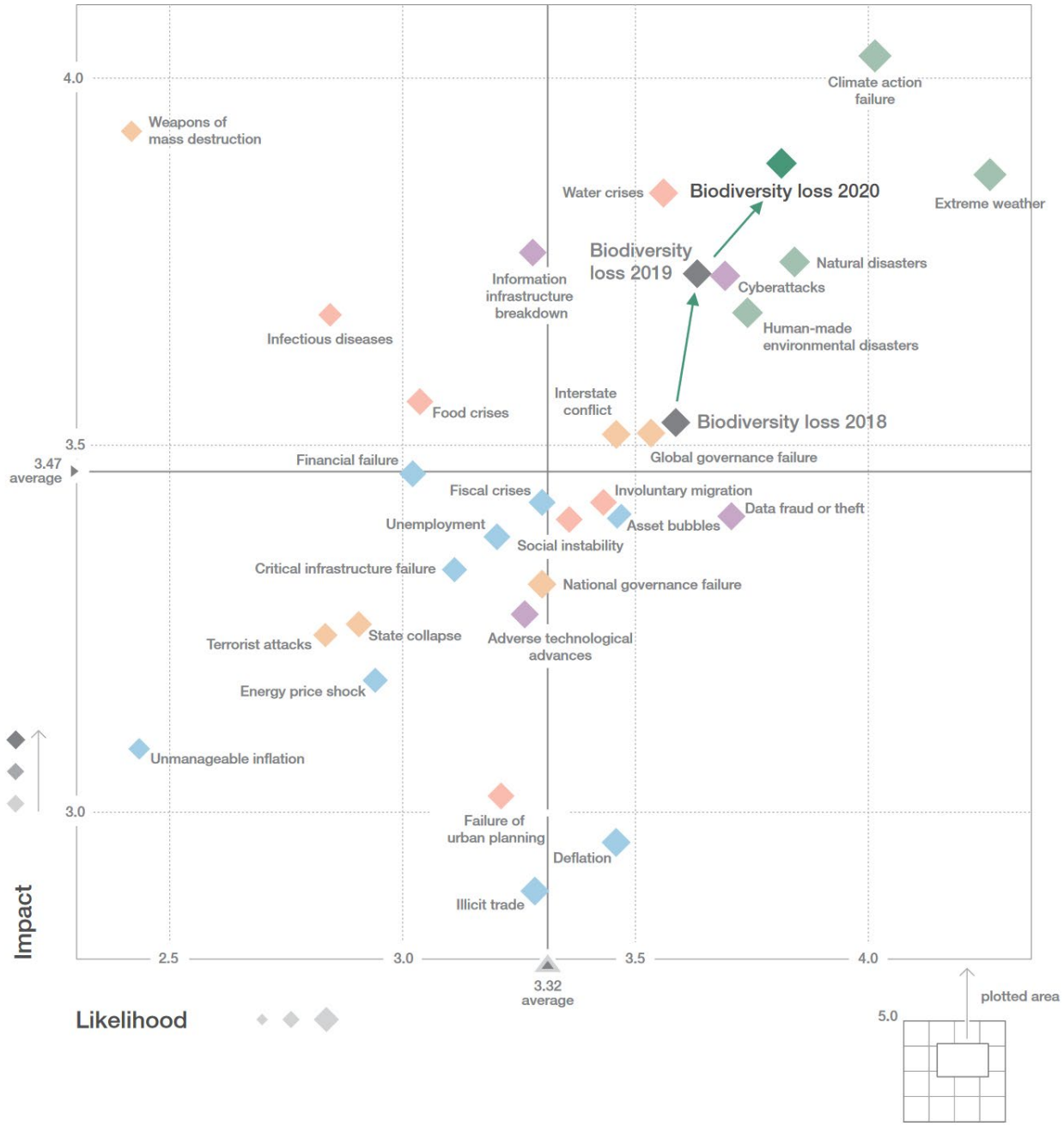
net-zero and nature positive



Biodiversity loss and climate change mutually reinforce each other, and neither will be successfully resolved unless tackled together.

More than half of the world's economic output is moderately or highly dependent on nature and there is growing recognition in the finance and business sector of the need to move beyond climate considerations and address nature-related concerns.

The global risks landscape 2020 and the evolution of the biodiversity loss risk in the past three years



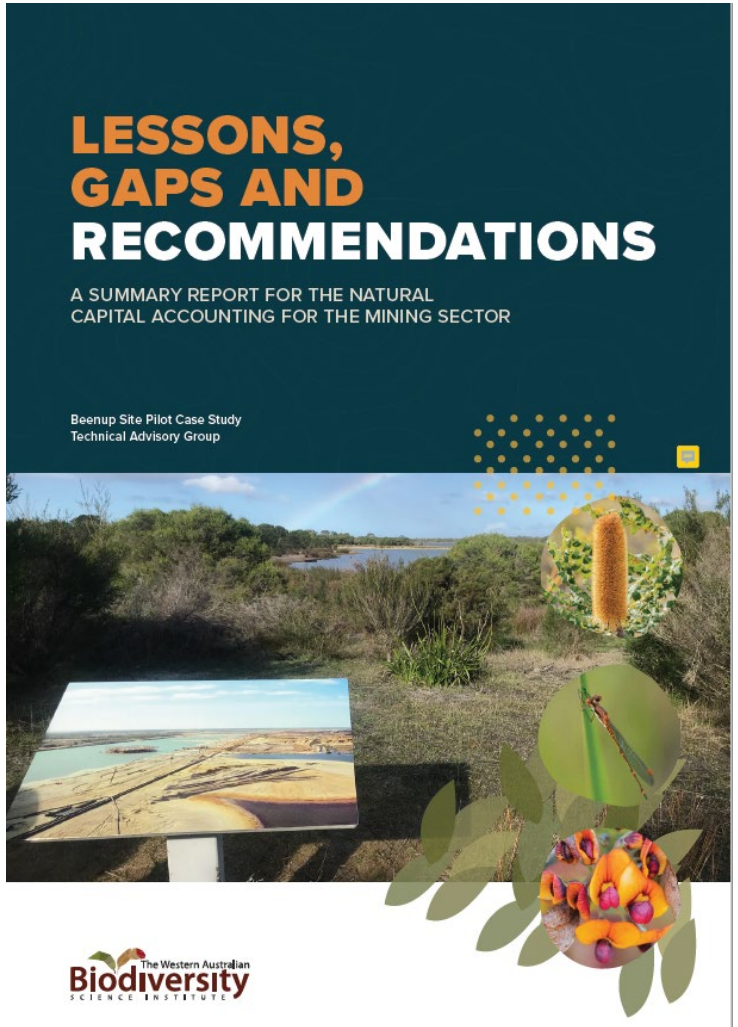
World Economic Forum. 2020. Nature Risk Rising.

BHP Beenup Natural Capital Account

THE WESTERN AUSTRALIAN BIODIVERSITY SCIENCE INSTITUTE

Technical Advisory Group

Anthony O'Grady	CSIRO
Bryan Maybee	Curtin University/CRC TiME
Graham Oborn	BHP
Owen Nevin	WABSI
Ram Pandit	UWA
Renee Young	WABSI
Stephen White	BHP
Tim Cooper	BHP



The Western Australian Biodiversity Science Institute

BHP Beenup Natural Capital Account

THE WESTERN AUSTRALIAN BIODIVERSITY SCIENCE INSTITUTE

The Western Australian Biodiversity Science Institute

BHP Beenup Natural Capital Account

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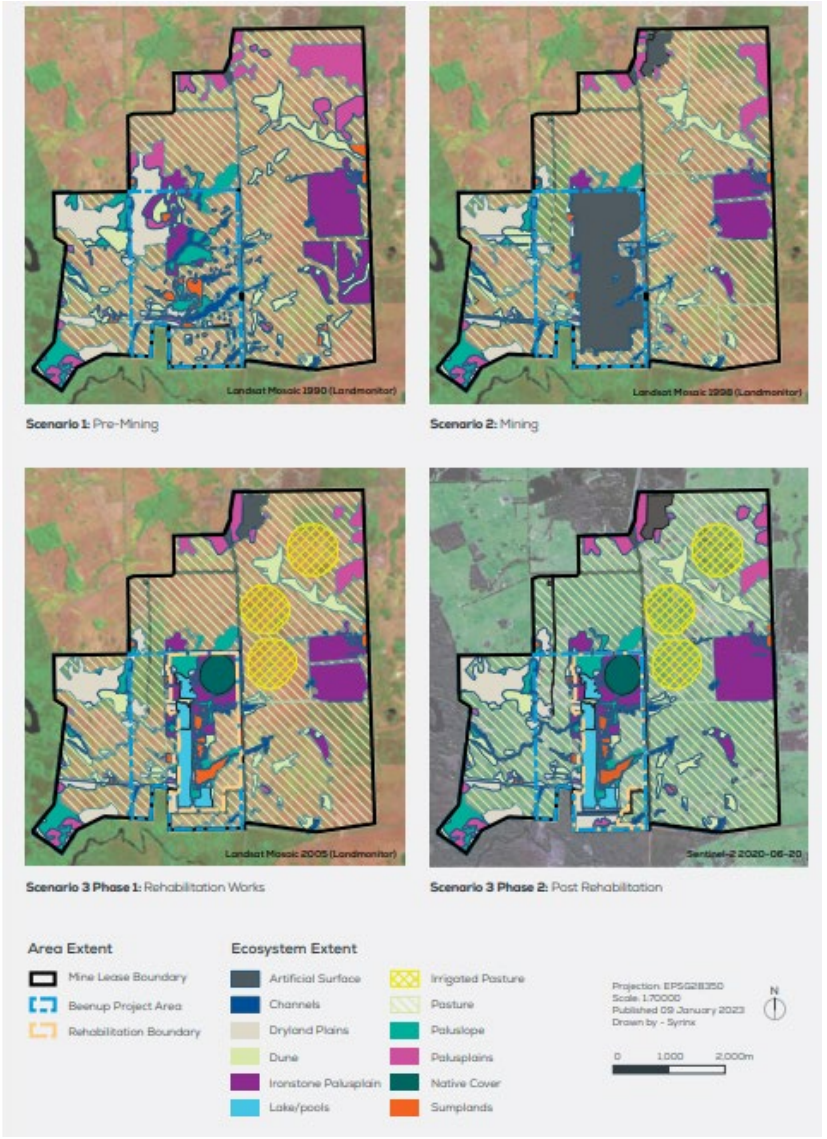


BHP Beenup Natural Capital Account

THE WESTERN AUSTRALIAN BIODIVERSITY SCIENCE INSTITUTE

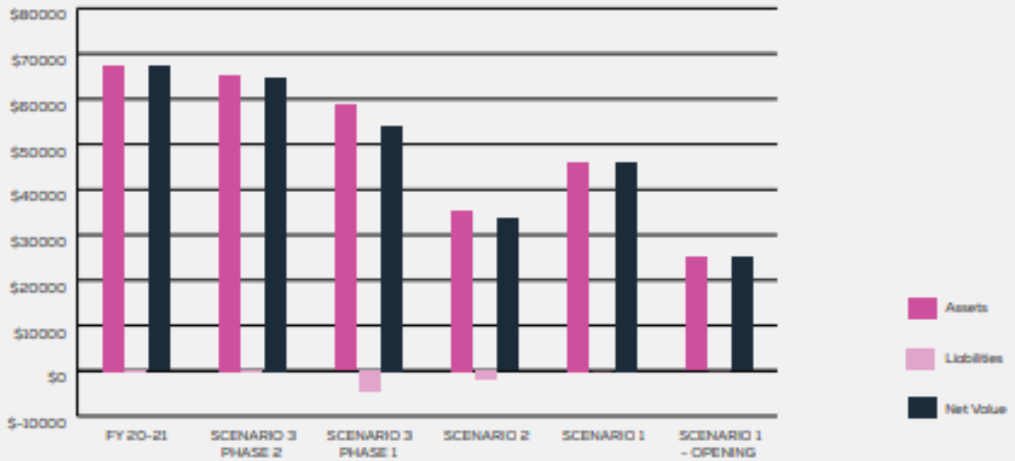


Figure 9. Summary of the net natural capital value for each of the NCA Scenarios (AUD$/ha)

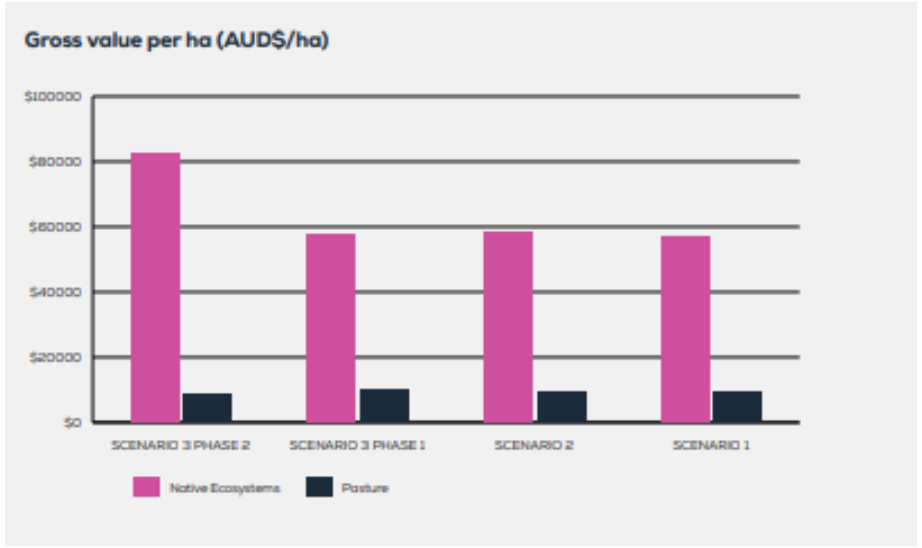
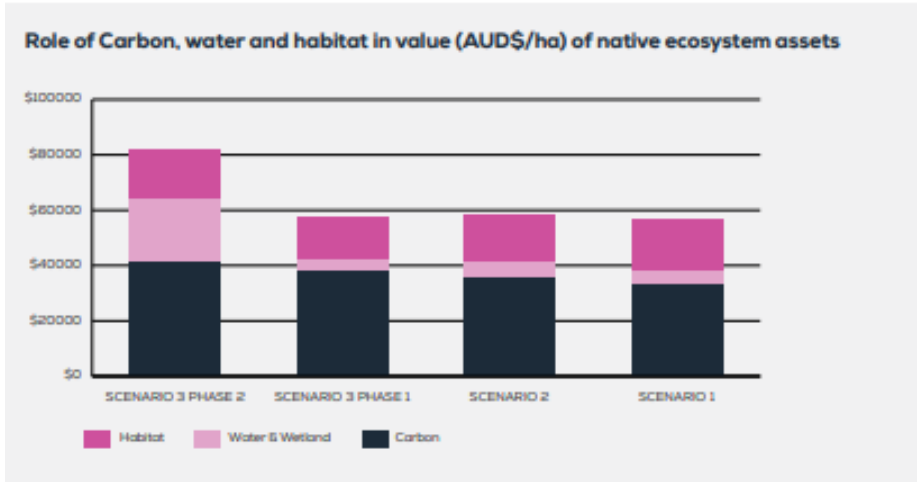


Figure 10. Total gross value of native and pasture ecosystems across the NCA Scenarios (AUD$/ha)

Table 10. Breakdown of the contribution of carbon, water and wetlands and habitat to gross natural asset value (AUD$/ha)

Ecosystem Asset Value (AUD$/ha)	Scenario 3 Phase 2 AUD$	Scenario 3 Phase 1 AUD$	Scenario 2 AUD$	Scenario 1 AUD$
Carbon	40,841	37,661	35,736	32,548
Water & Wetland	23,111	4,714	5,581	5,187
Habitat	18,175	15,336	17,022	19,480
TOTAL	**82,127**	**57,711**	**58,339**	**57,215**



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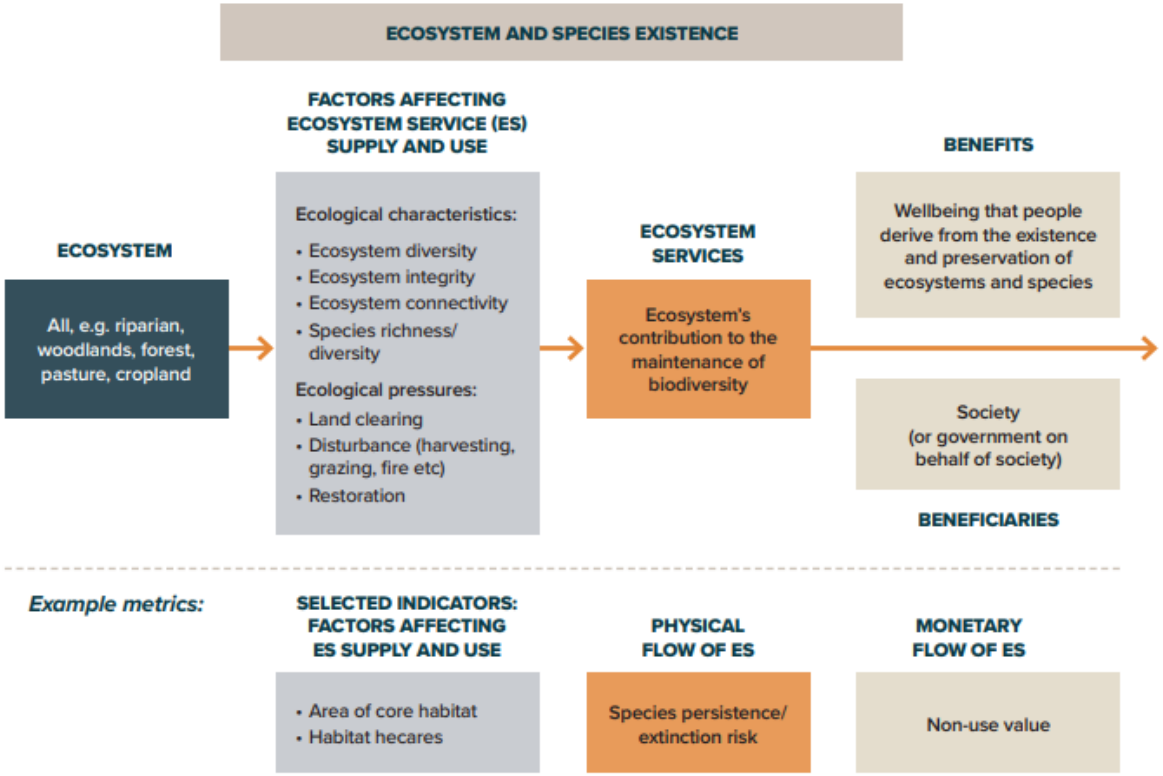
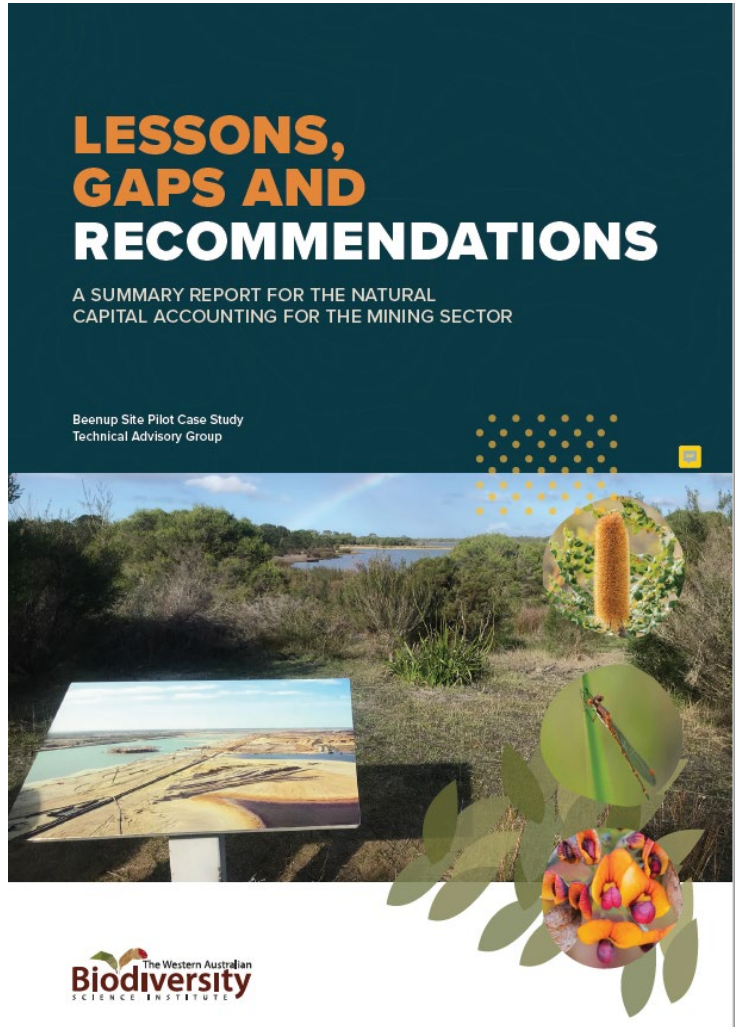
Learnings to date

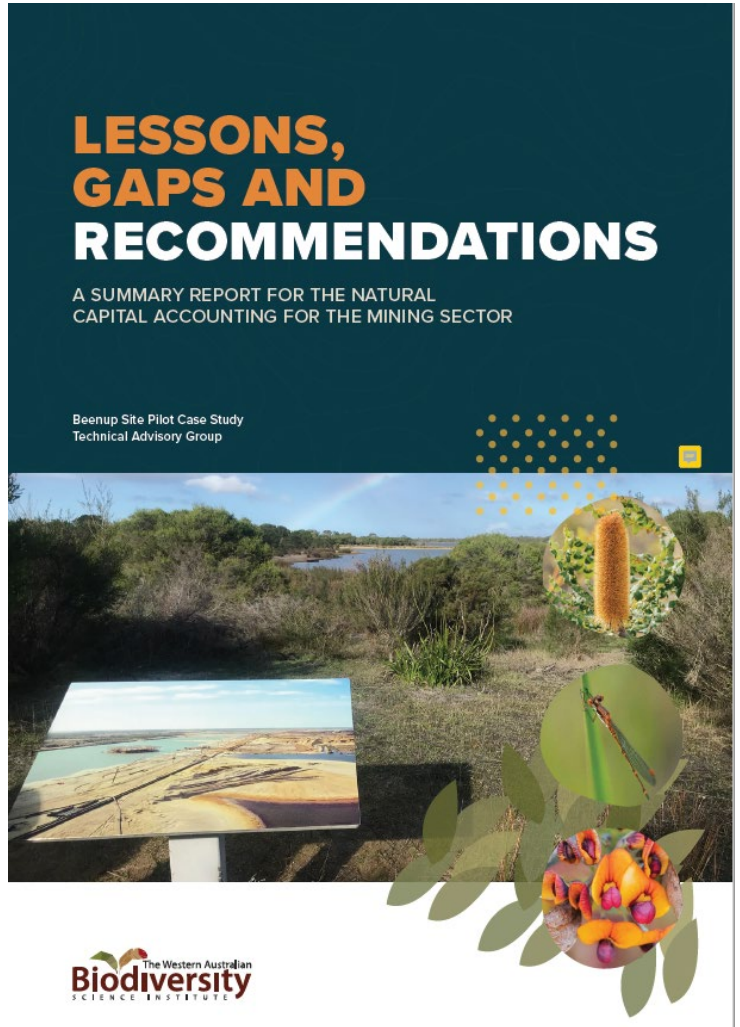




The Western Australian Biodiversity SCIENCE INSTITUTE

Learnings to date

- Nature is complex and is difficult to assign a value due to its uniqueness confounded by natural and human effects
  - We don't know what right is – act to learn
  - Leverage knowledge partnerships
- Understanding and incorporating cultural and community values will take time
- Some ecosystem services have well established markets/values (e.g. carbon sequestration or provisioning of clean water)
  - These can mask factors with less well-established valuation
  - Only assets that generating a flow of benefits to the business are balance sheet items
- Partitioning private benefits from societal benefits is environmental accounts can be challenging
  - This has impacts on the capacity to report within corporate accounting frameworks
- Valuation does not need to be monetary but should move beyond physical flows



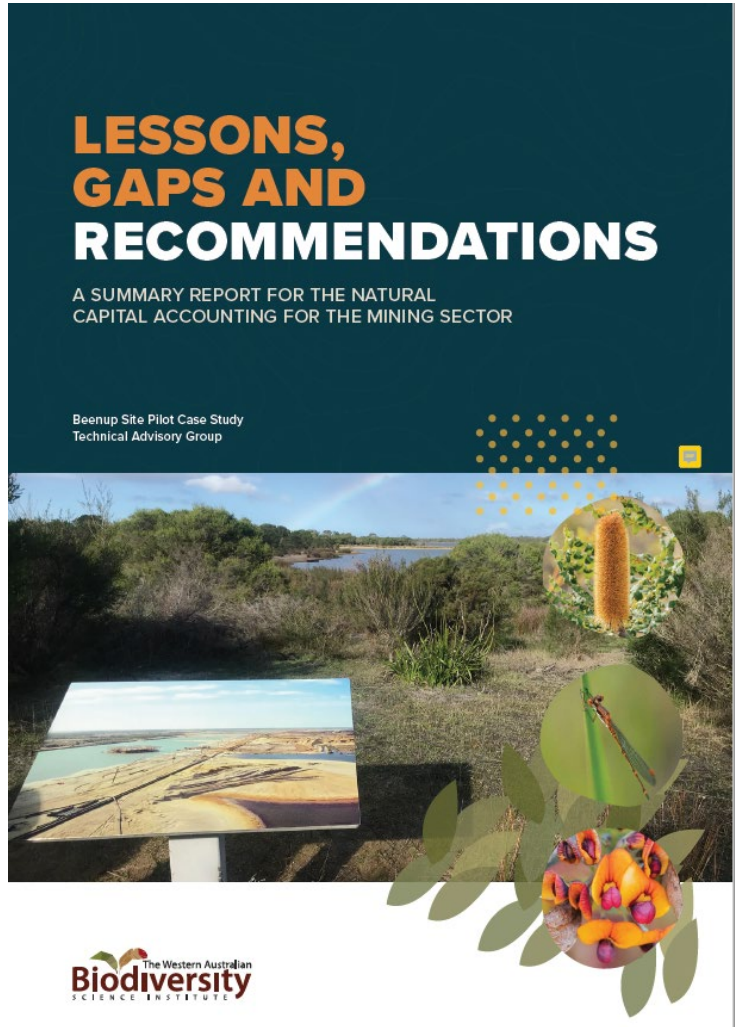
Learnings to date

- Get framing right early to set up targeted information and data requirements and eliminate waste
  - Consider development of an “ecosystem asset register” across life of mine
  - Establish the boundaries of extent to be considered – responsible entities can change over time

- There is a need to adopt nationally agreed and globally aligned ecosystem typologies

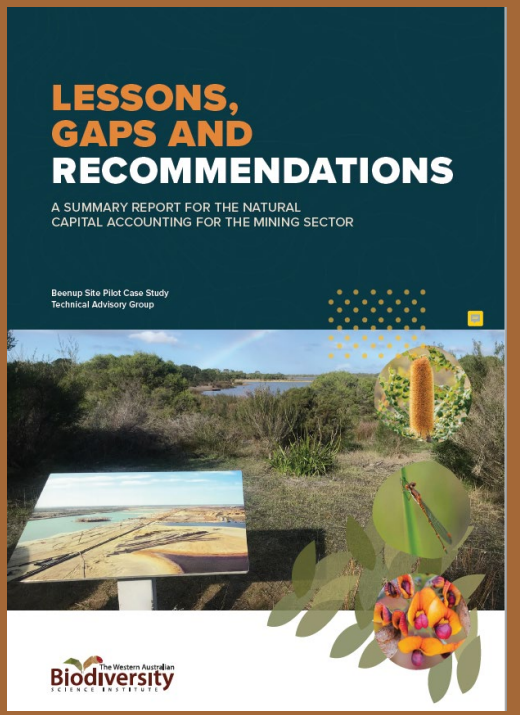
- Establish condition measurement methodologies which are transparent and repeatable

- Global and National reform agenda is rapidly evolving
  - involvement will enable more workable outcomes



The Western Australian Biodiversity Science Institute

Download the report: https://wabsi.org.au/wp-content/uploads/2024/05/Lessons-Gaps-Recommendations-Report_WABSI-May-2024.pdf



CSIRO

Curtin University

AUSTRALIA ECU EDITH COWAN UNIVERSITY

MU Murdoch University

THE UNIVERSITY OF WESTERN AUSTRALIA

GOVERNMENT OF WESTERN AUSTRALIA
WAM WESTERN AUSTRALIAN MUSEUM

GOVERNMENT OF WESTERN AUSTRALIA
Department of **Biodiversity, Conservation and Attractions**

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Department of **Mines, Industry Regulation and Safety**

Government of **Western Australia**
Department of **Water and Environmental Regulation**

Ecological Restoration and Natural Capital Accounting

Associate Professor Rachel Standish, Murdoch University

Ecological Restoration and Natural Capital Accounting

Rachel Standish, Tina Parkhurst, Lucy Commander, Andrew Grigg and many Alcoa staff

Natural Capital Accounting Symposium | 17 July 2024 | ANZAC Club | Boorloo

Harry Butler Institute
MURDOCH UNIVERSITY

THE UNIVERSITY OF MELBOURNE

CRC TiME
Transformations in Mining Economies

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Acknowledgement of Country

The Whadjuk, Wiilman and Pinjarup peoples of the Noongar Nation.

I pay my respects to the First Nations Peoples of the lands and waters on which I live and work. I acknowledge their rich cultural heritage, deep connection to, and expert stewardship of, Country.

ECOLOGICAL RESTORATION KEY TO GLOBAL COMMITMENTS TO CONSERVE AND REPAIR NATURE

SUSTAINABLE DEVELOPMENT GOALS

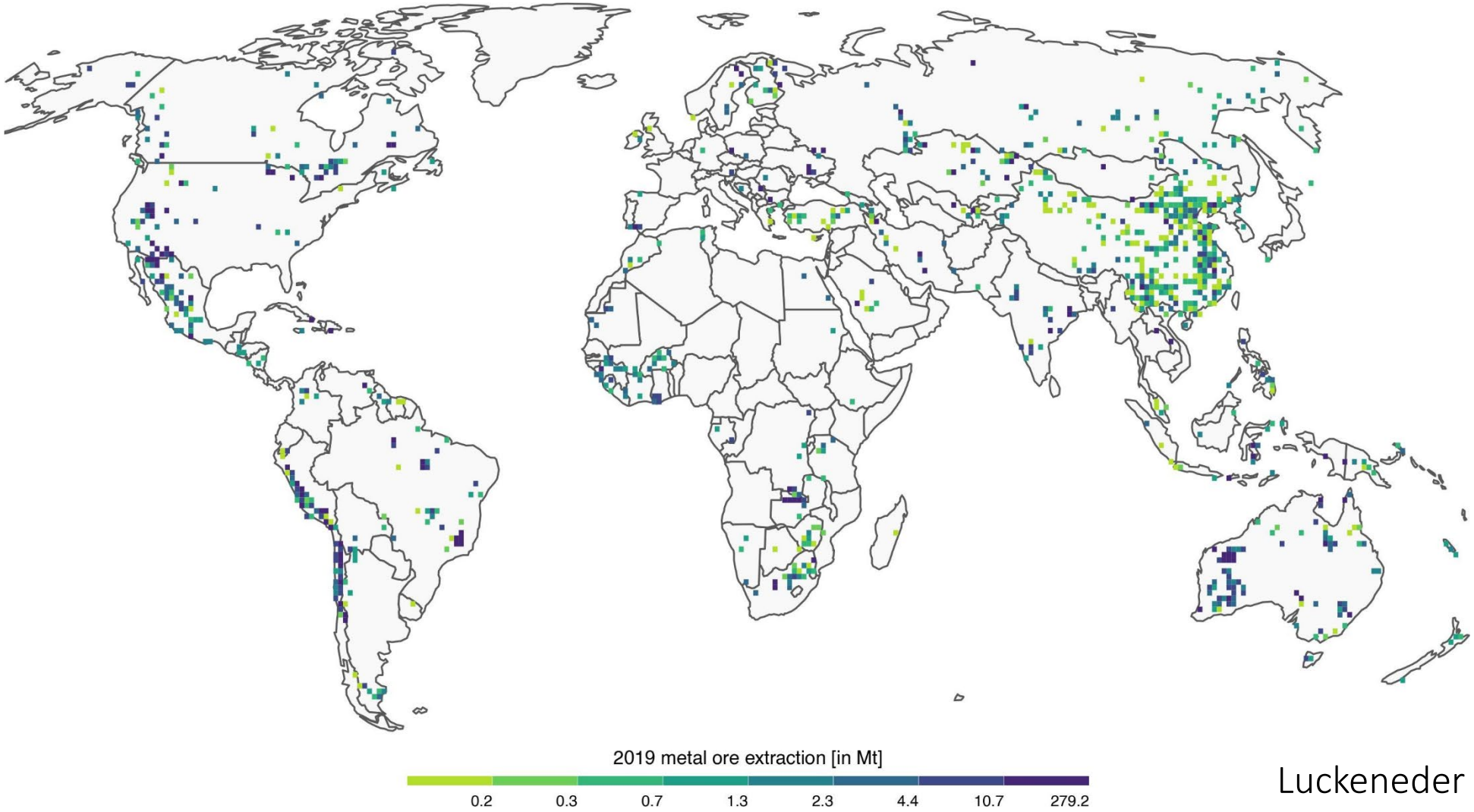
THE BIODIVERSITY PLAN
For Life on Earth

COP29
Baku
Azerbaijan
UN CLIMATE CHANGE CONFERENCE

UNITED NATIONS DECADE ON
ECOSYSTEM
RESTORATION
2021-2030

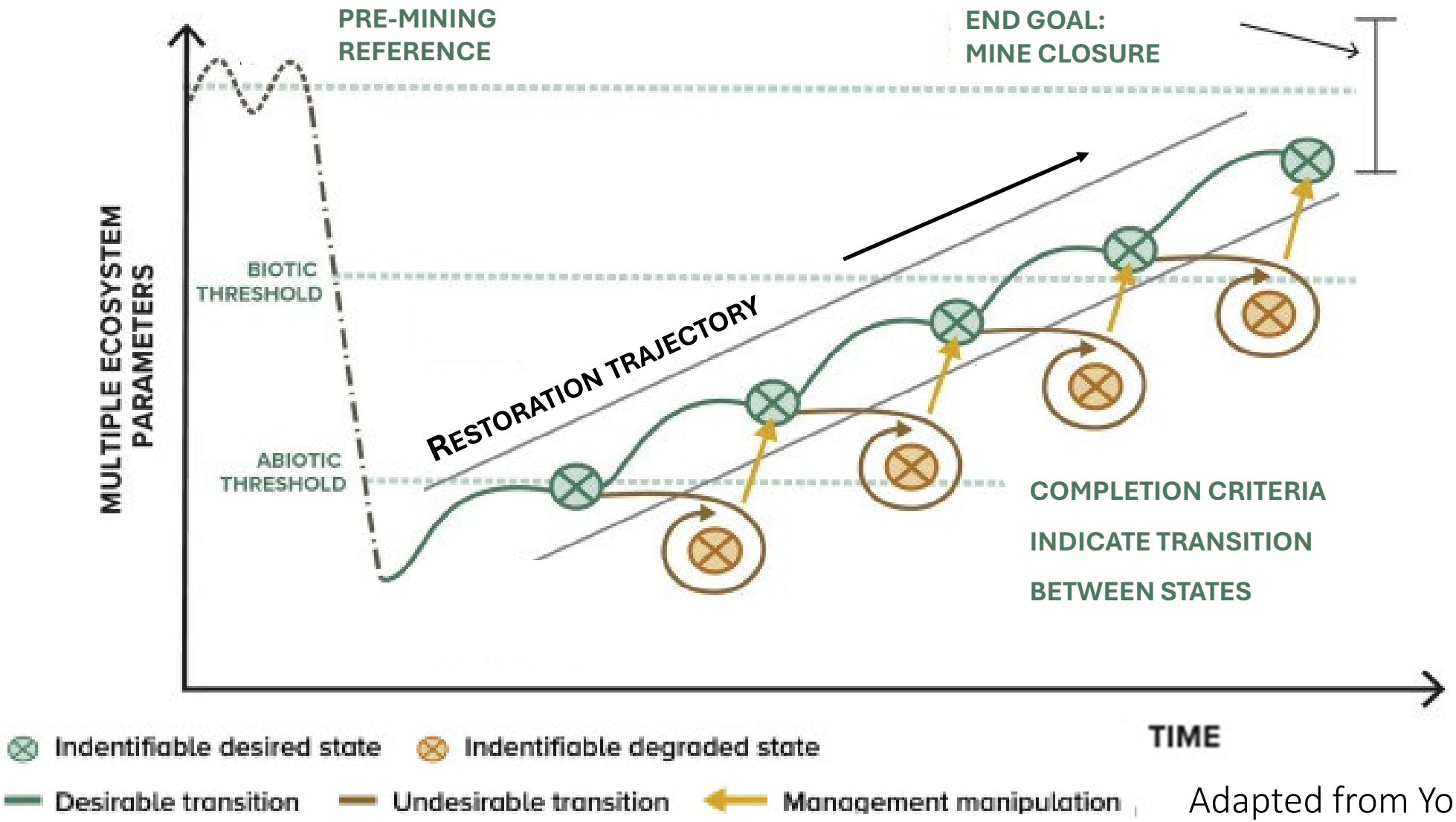
Convention on
Biological Diversity

GLOBAL MINING LAND USE



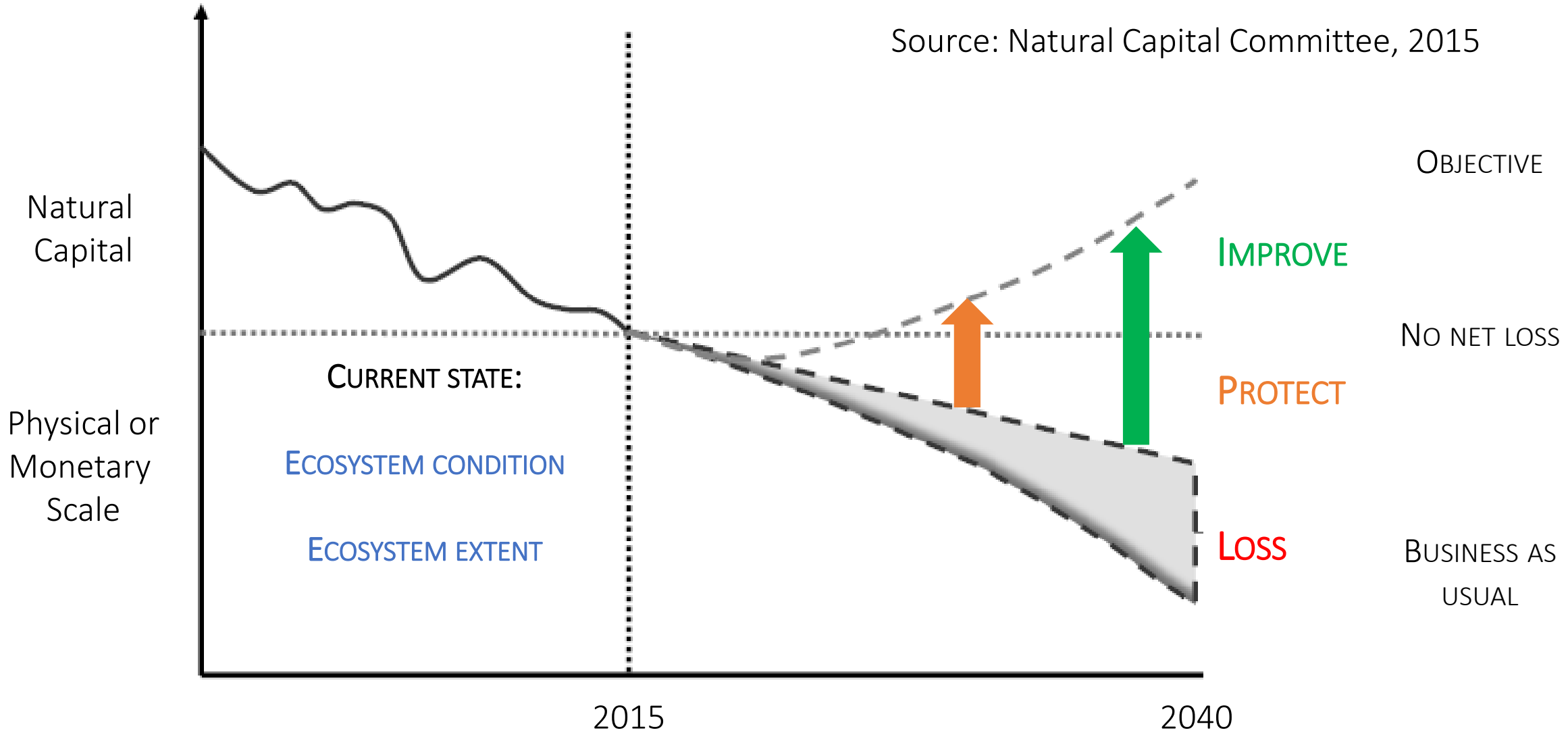
Luckeneder et al. 2021

How to measure mine restoration success?



Adapted from Young et al. 2019

MEASURING RESTORATION SUCCESS WITH NCA FRAMEWORK



ALCOA CASE STUDY

Aim: To test utility of natural capital accounting to track and report restoration outcomes in the mining sector

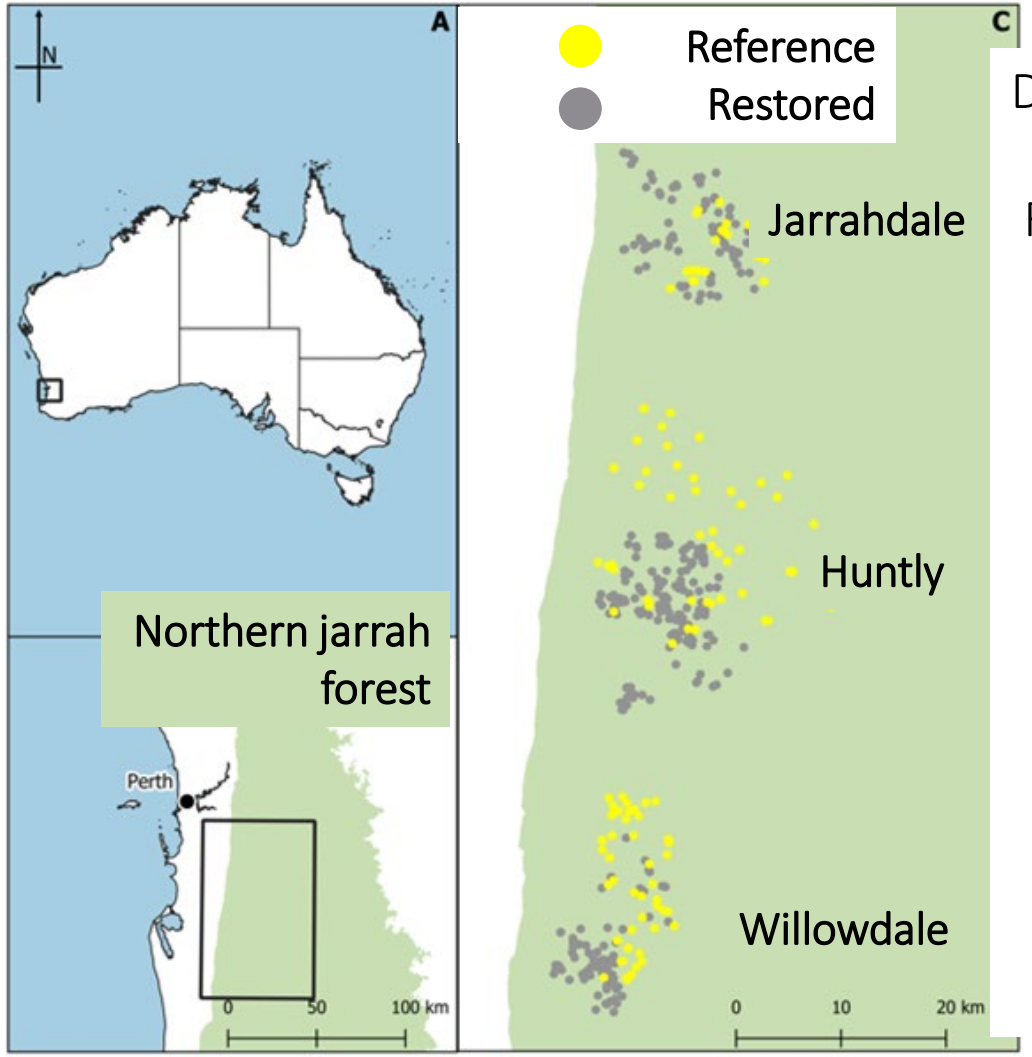
ECOSYSTEM DATA

OPENING

REFERENCE

CLOSING*

SOILS, VEGE, BIRDS



DATA SPANNED ANNUAL RESTORATION EFFORTS
1966
TO
2022

*CLOSING AT:
AT 1 YR
5–10 YR
20+ YR

Map from Standish et al. 2021

ECOSYSTEM CONDITION: ASSETS AND LIABILITIES

Typology class	Assets and liabilities*
Abiotic characteristics	Topsoil
	Ground cover
Biotic characteristics	Native vegetation
	Key characteristic flora
*Processes	Weed invasion*
	Dieback*
	Native fauna
	Key characteristic fauna
	Threatened fauna species
	Non-native fauna invasion*

Class	Example variables
Chemical state	Phosphorus (mg/kg)
	Organic carbon (mg/kg)
	pH
Compositional state	Total flora species richness
	Total native species richness
	Native shrub species richness
Structural state	Native tree cover
	Native shrub cover
	Native annual (forb etc.) cover
Functional state	*Bird feeding prefences*
	Abundance of generalists
	Abundance of insectivores

ECOSYSTEM CONDITION ACCOUNT EXAMPLE: JARRAHDALE

Ecosystem condition

Jarrahdale

		Post mining-pre rehab	1 year	5 - 10 years	20+ year
Biotic characteristics					
Compositional state	Total native species richness	Low	High	High	High
	Native tree species richness	Low	High	High	High
	Native shrub species richness	Low	High	High	High
	Native annual + perennial (forb, grass, rush, sedge) species richness	Low	High	Med	Med
Structural state	Native tree cover	Low	Med	High	High
	Native shrub cover	Low	Med	High	Med
	Native annual + perennial (forb, grass, rush, sedge) cover	Low	Low	Low	Low
	Non-native species cover	High	High	Med	Med

0–0.33 Low

0.34–0.66 Med

0.67–1.00 High

Mine restoration and NCA: Lessons learned

NCA is useful to track monitoring timeline, rehabilitation schedules and completion-criteria based recovery trajectories.

Accounts can track targeted interventions to improve environmental assets (e.g., threatened species) or reduce liabilities (e.g., dieback).

Valuable insights on data requirements to present ecological restoration outcomes in a natural capital accounting format.

On the horizon: condition (and extent) accounts could underpin mining companies' nature-related impacts, dependencies and risks reporting.

www.nature.com/scientificreports

scientific reports

Volume 14: 11369.

Balancing the books of nature by accounting for ecosystem condition following ecological restoration

Tina Parkhurst[1]✉, Rachel J. Standish[1], Suzanne M. Prober[2], Halina Kobryn[1] & Michael Vardon[3]

Tina.Parkhurst@unimelb.edu.au

REFERENCES

Parkhurst T, Standish RJ 2023. Natural Capital Accounting in the mining sector. The Alcoa case study - testing the SEEA-EA framework in the context of mine rehabilitation. Prepared by Murdoch University for CRC TiME, August 2023.

Luckeneder S, Giljum S, Schaffartzik A, Maus V, Tost M 2021. Surge in global metal mining threatens vulnerable ecosystems. Global Environmental Change 69: 102303.

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Standish RJ, Gove, AD, Grigg AH, Daws MI 2021. Beyond species richness and community composition: Using plant functional diversity to measure restoration success in jarrah forest. Applied Vegetation Science 24: e12607.

Young RE, Manero A, Miller BP, Kragt ME, Standish RJ, Jasper DA, Boggs GS 2019. A framework for developing mine-site completion criteria in Western Australia: Project Report. The Western Australian Biodiversity Science Institute, Perth, Western Australia.

Using Natural Capital Accounts as a Forecasting Tool

Dr Ljiljana Pantelic, Syrinx
Dr Kathy Meney, Syrinx

Panel Discussion with Industry

Stephen White, Alcoa
Dr Lucy Commander, Alcoa
Phil Cryle, BHP
Vern Newton, Hanson

New Guidance Material for Natural Capital Accounting in the Resources Sector

Dr Tony O'Grady, CSIRO

Australia's National Science Agency

Natural capital accounting in the mining sector:
Guidance for the resources sector

Anthony O'Grady, Greg Smith, Claire Horner, Bryan Maybee

NCA Symposium, 17 July 2024

Nature Matters

United Nations Climate Change

Convention on Biological Diversity

System of Environmental Economic Accounting

GRI

CAPITALS COALITION

bsi.

IR INTEGRATED REPORTING

Natural Capital Finance Alliance
Finance sector leadership on natural capital

TEEB

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

TNFD Taskforce on Nature-related Financial Disclosures

CDP

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

SASB SUSTAINABILITY ACCOUNTING STANDARDS BOARD

ACCOUNTING FOR NATURE

THE BIODIVERSITY PLAN
For Life on Earth

Top 10 risks

Extreme weather events

Critical changes to Earth ecosystems

Biodiversity loss and Ecosystem collapse

Natural resource shortages

Misinformation and disinformation

Adverse outcomes of AI technologies

Involuntary migration

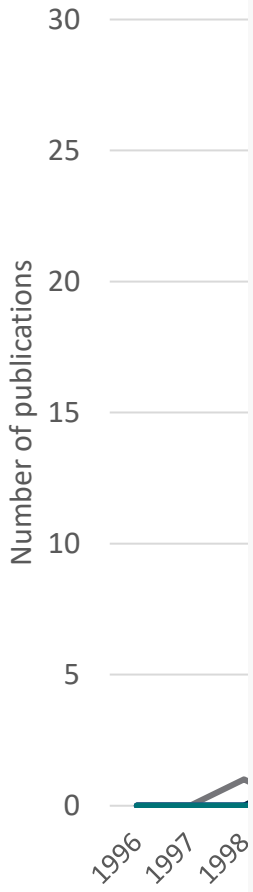
Cyber insecurity

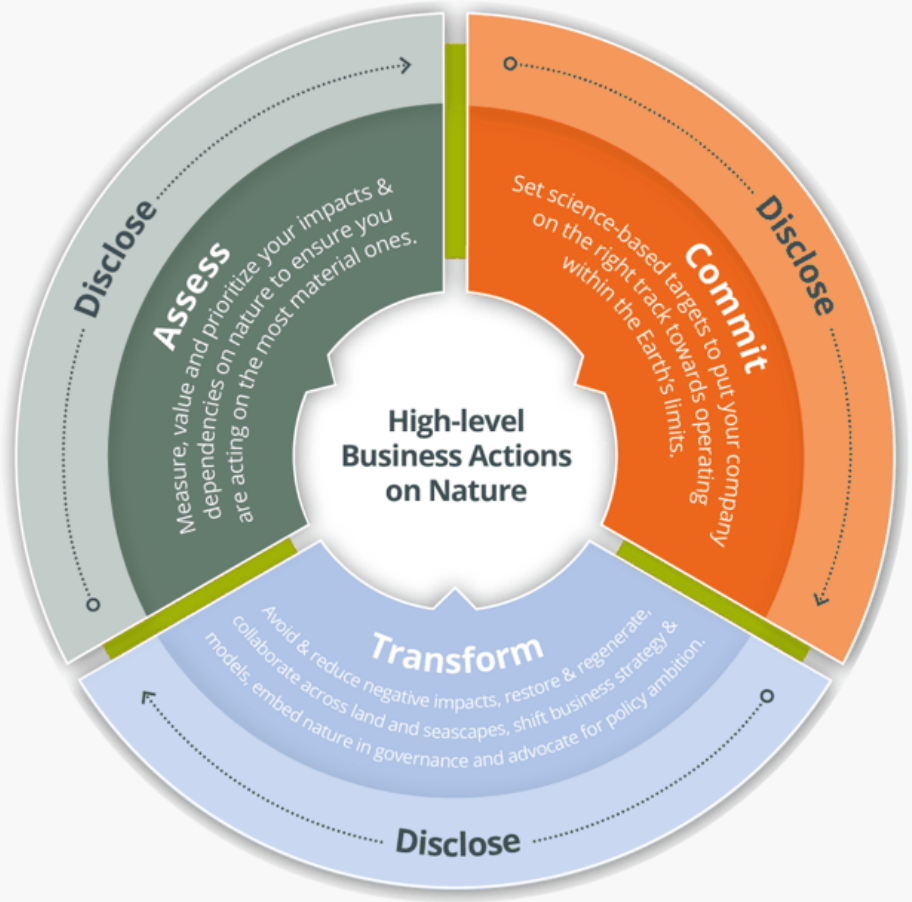
Societal polarization

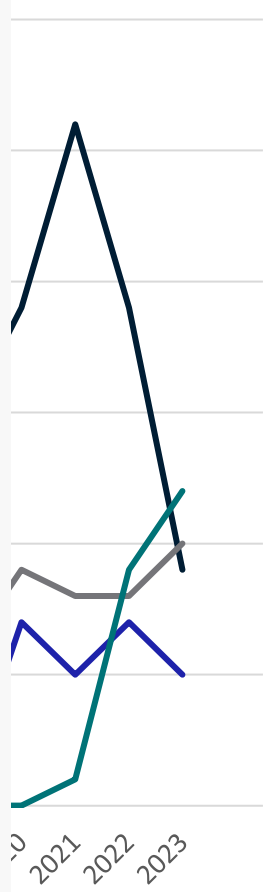
Pollution

Nature disclosure

Nature positive on the rise







Murphy, H. T., Nicol, S., I
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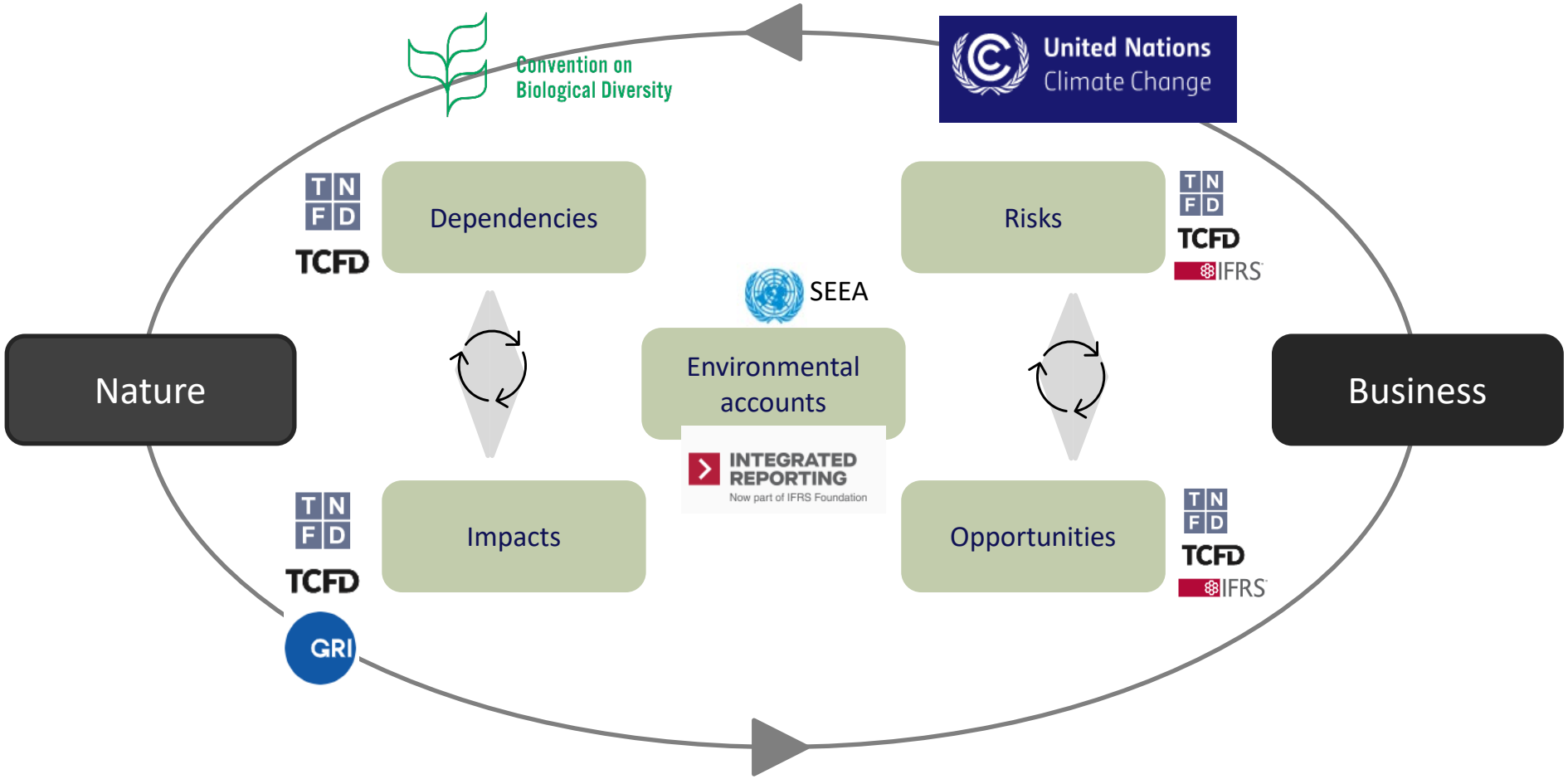
CSIRO

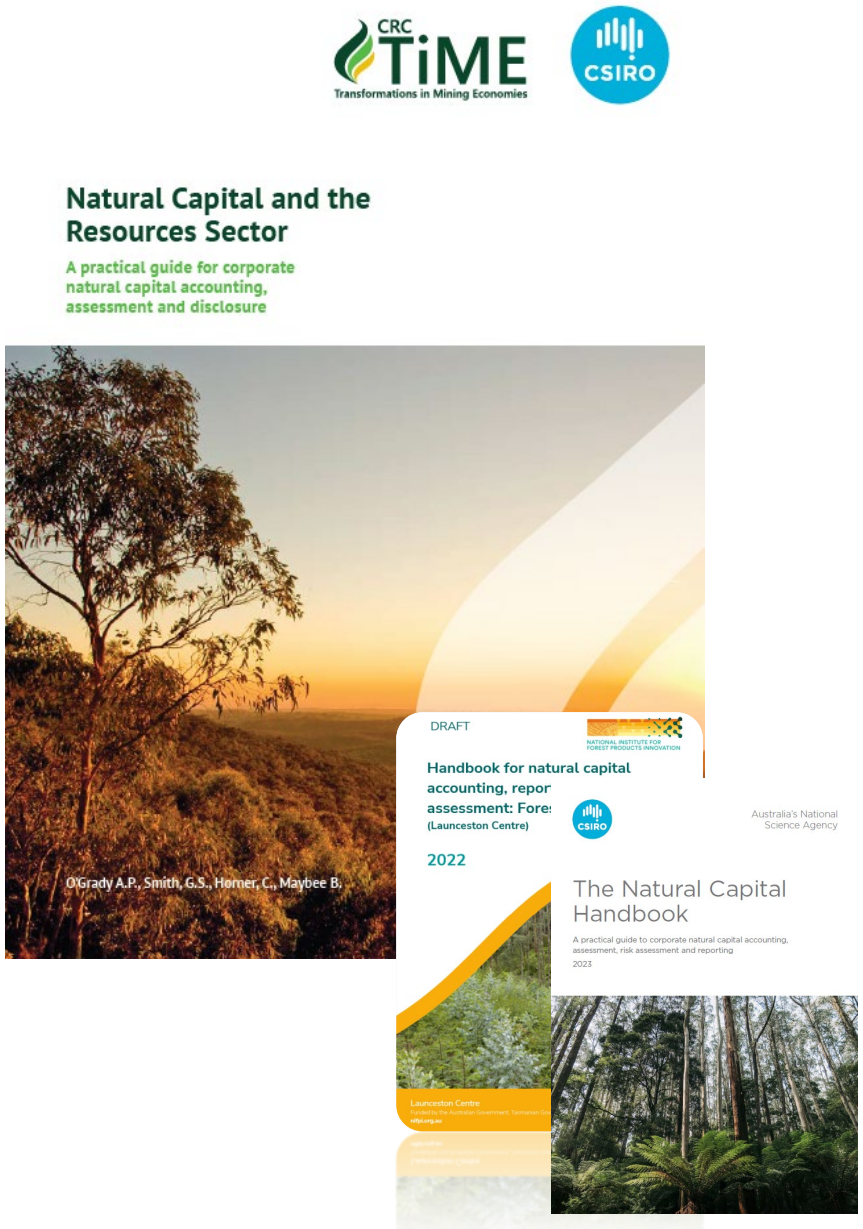
Nature disclosure

Disclose



Nature disclosure

Guidance material



What it is

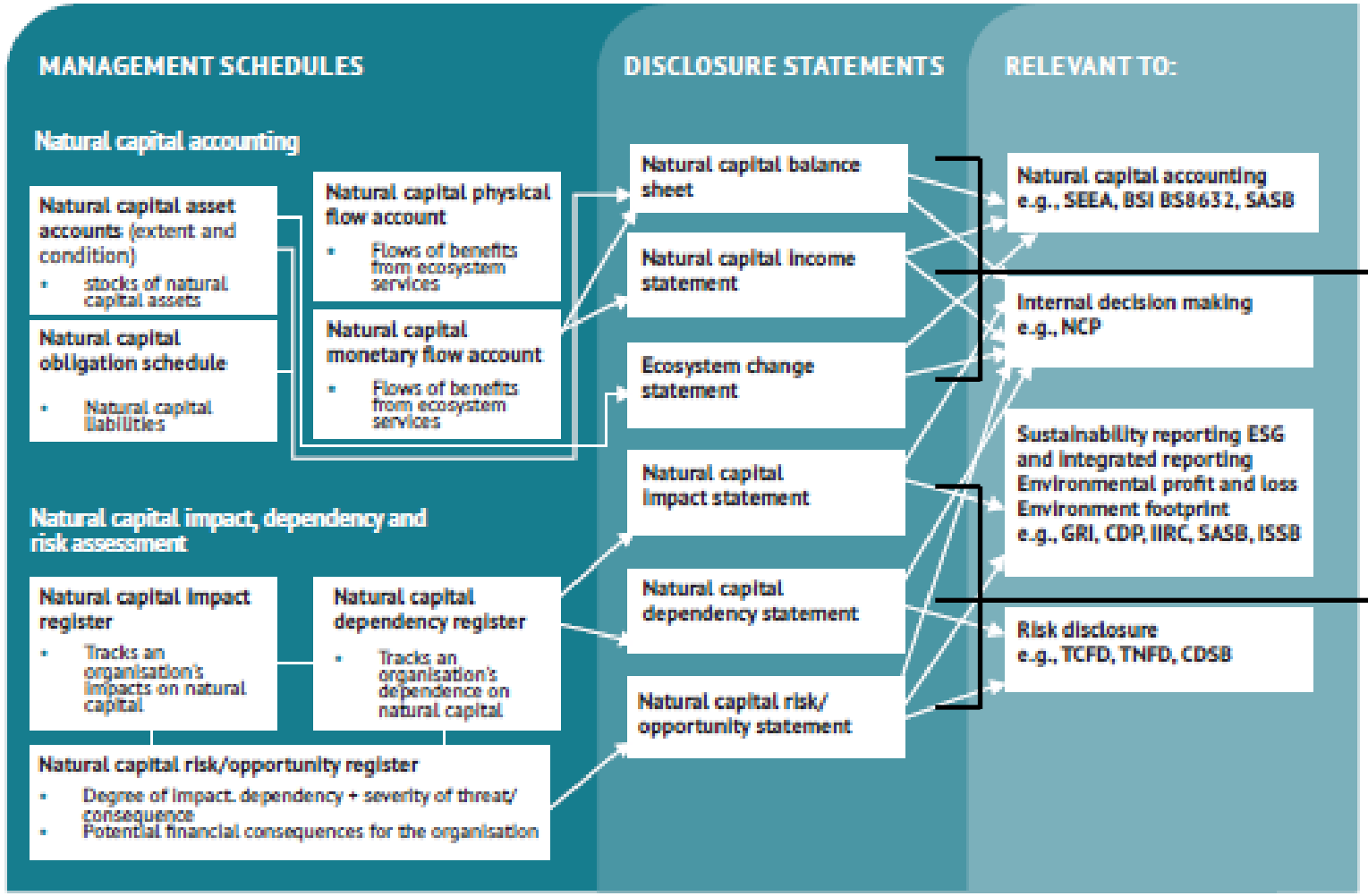
- NC concepts and overview (linkages)
- Foundations in SEEA EA and SEEA CF
- A guide to approaches and presentation of NC

What it isn't

- Not attempt to recreate existing approaches
- Not a new NC framework
- Not a standard

Nature disclosure

Information system



Natural capital accounts

Natural capital position

Natural capital performance

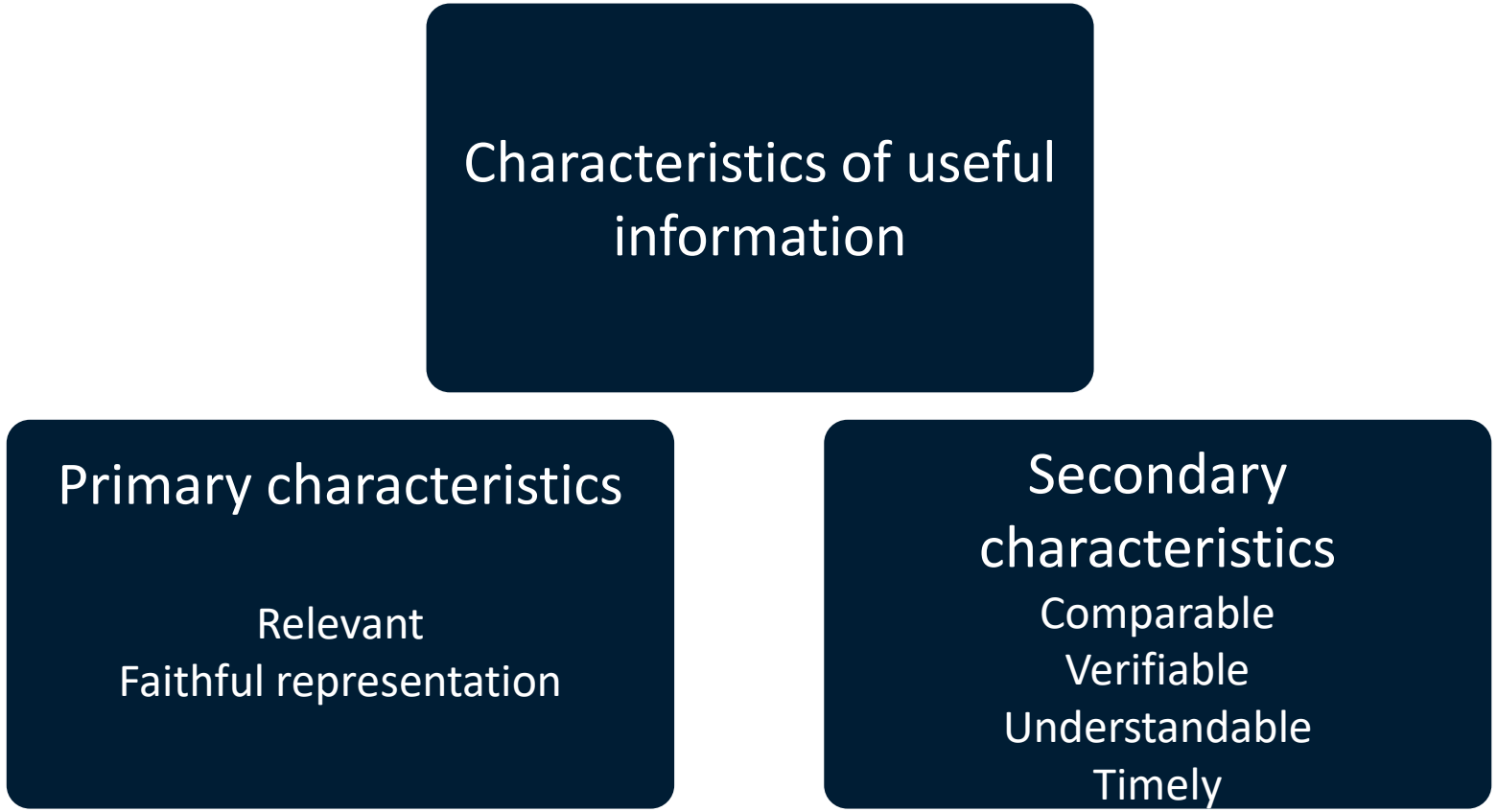
Natural capital Assessment

Natural capital materiality

Natural capital risk

Nature disclosure

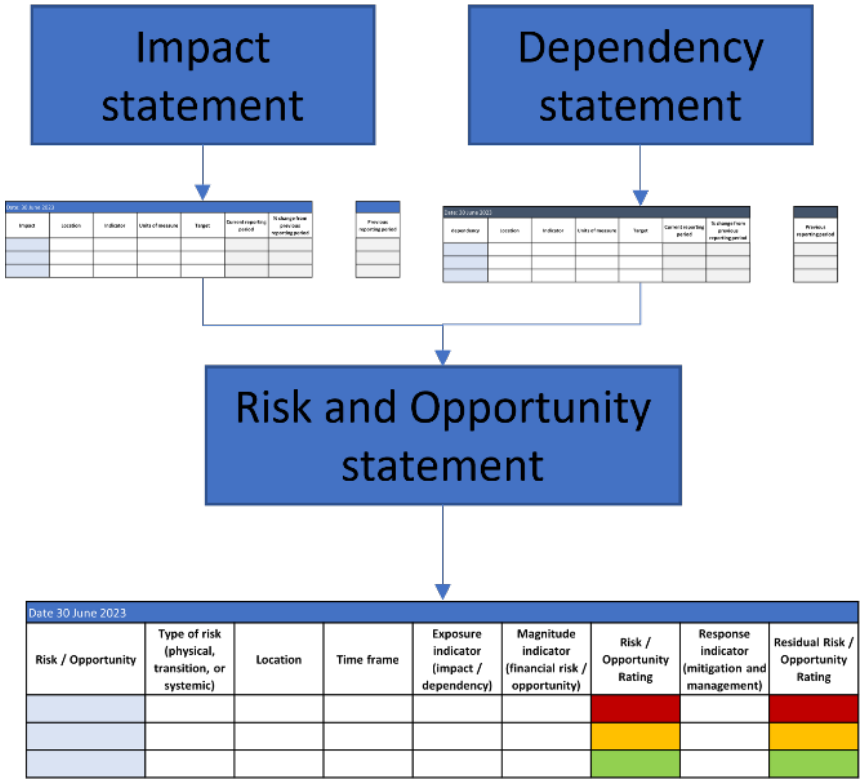
Information system



IFRS 2010 Conceptual framework for financial reporting

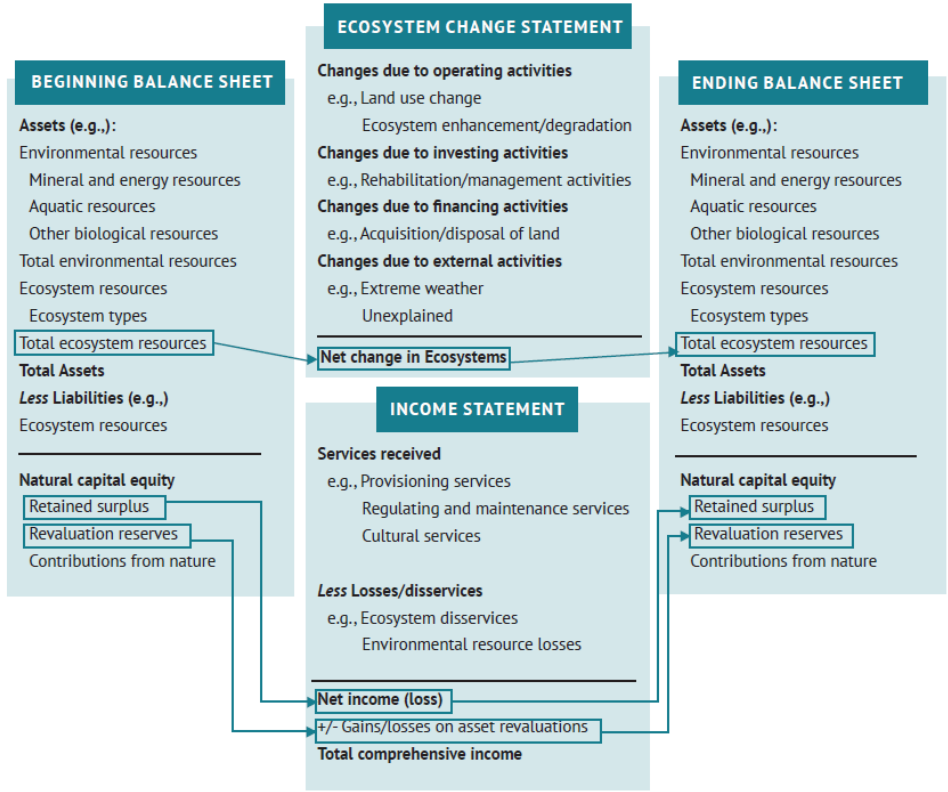
Statements

Impacts and dependencies disclosure



All Orgs
(TNFD/TCFD)

Natural capital position/performance



Organisations with direct control and management of NC

Disclosures

Governance

Information that enables users to understand the governance process, controls and procedures the entity uses to monitor, manage and oversee climate and nature-related risks

Strategy

Information that enables investors to understand the entity's strategy for monitoring climate and nature-related risks and opportunities. This includes information about the resilience of the entity to nature-related changes, developments and uncertainties

Risk Management

Information that enables the users to understand the processes the entity uses to identify, assess, prioritise and monitor climate and nature-related risks and opportunities

Metrics and Targets

Information that enables the users to understand the entity's performance in relation to climate and nature-related risks and opportunities

Examples

Driver of nature change	Indicator	Location	TNFD	Units	Target	Current reporting period	Previous reporting period	% change	Notes
Climate change	Scope 1 GHG emissions	Western Australia (Beenup)	Core (C1.0)	MtCO2-e	Maintain operational GHG emissions at or below FY2017 levels	0.04	0.05	(5.6)	
		Whole of business				9.2	10.1	(9)	
	Scope 2 GHG emissions	Western Australia (Beenup)				0.01	0.01	(5.6)	
		Whole of business				3.1	6.2	(50)	
	Scope 3 GHG emissions	Western Australia (Beenup)				NA	NA		Data not available
		Whole of business				3.2	3.1	3	
Landuse	Total extent of landuse change	Western Australia (Beenup)	Core (C2.0)	km2	-	628	0		
	Landuse in prioritised ecosystems		Core (C2.1)			3.35	3.35	-	
Pollution/ pollution removal	Total pollutants released to soil split by soil type	Whole of business	Core (C3.0)			NA	NA		Data not available
	Volume of waste water discharged and concentration of key pollutants in the wasterwater discharged		Core (C3.1)			NA	NA		Data not available
	Number of days of exceedance of water qulity thresholds		Def. by Org.			12	21	(43)	

Nature of dependency	Nature of dependency	Location	TNFD metric	Unit	Target	Current reporting period	Previous reporting period	% Change	Notes
Climate change	Absence of destructive bushfire	Western Australia (Beenup)		% of estate affected by destructive bushfire	2%	4%	5%	(20%)	Dependency defined as the absence of extreme weather events
Landuse	Extent of land that the organisation controls that is used for the production of natural resources	Western Australia (Beenup)	Additional (A3.1)	km^2		363	0		Change not recorded due to change from zero
	Adequate pollination services to maintain plant and seed production	Western Australia (Beenup)	Additional (A3.4)	#Hives	120	108	102	5.6	
Resource use / replenishment	Adequate rainfall to meet growth requirements	Western Australia (Beenup)		mm	>550	461	468	(1.5)	Operation is in a drying climate
	Total water consumption in water stressed areas	Whole of business	Core (4.0)	ML		115,400	106,950	7.9	
	Operational energy consumption	Whole of business		PJ		149	155	(3.9)	

Resource replenis

Invasive species

NATURAL CAPITAL INCOME STATEMENT 30 JUNE 1999

		Units	Quantity	Value to reporting entity ($'000's)	Value to rest of society ($ '000's)
Natural Capital Income Received from Ecosystem Assets					
Provisioning services	Grazing support	ha	886		1,248
	Habitat provision	no. of MNES	1		112
Regulating services	Carbon sequestration	t CO2eq	71,487		1,358
	Water flow	ML	31,292		3,129
Cultural services					
Natural Capital Income received from Environmental Assets					
Total natural capital income received					5,847
Less Natural capital services					
Ecosystem disservices					
Environmental resource loss					
Total natural capital service					
Net Natural Capital Profit/(L					
Plus Other comprehensive ir					
Gains(losses) on asset valua Gains on asset revaluations					
Total other comprehensive i					
Total Comprehensive Natura Capital Income					

DATE 30 JUNE 1991

Value to reporting entity ($'000's)	Value to rest of society ($ '000's)
	1,275
	504
	1,825
	2,666
	6,270

DATE 30 JUNE 1999

	Indicator	Units	Quantity (CondHa)	Value from natural capital
Natural capital assets				
Environmental assets	Mineral sands reserves			
Ecosystem assets	Pasture ecosystems		89	8,330
	Native ecosystems		69	13,618
	Aquatic ecosystems		137	2,595
Total ecosystem assets		CondHa	295	
Total natural capital assets				24,544
Natural capital liabilities				
Native ecosystem liabilities				
Aquatic ecosystem liabilities				
Total natural capital liabilities				
Natural capital equity				
Asset revaluation reserve				
Environmental resource valuation reserve				
Retained surplus/(Accumulated losses)				
Current year surplus/(deficit)				
Returns due to nature				
Contributions from nature				
Total natural capital equity				
Total Natural Capital Liabilities and Equity				

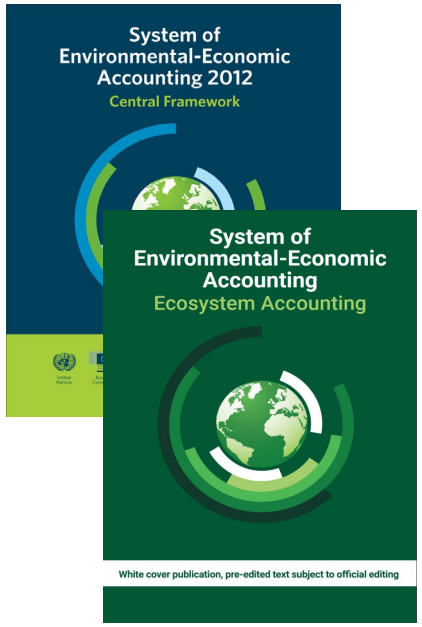
DATE 30 JUNE 1991

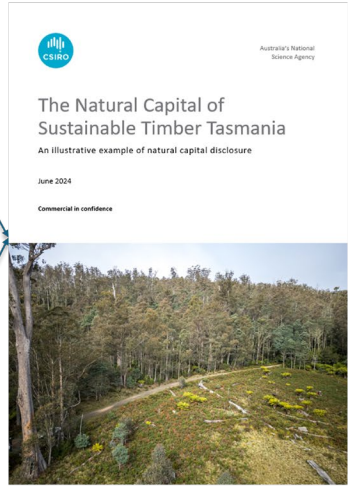
Quantity (CondHa)	Value from natural capital
	20,000
80	7,532
129	18,237
269	2,666
478	
	48,435

ECOSYSTEM CHANGE STATEMENT (Year ended 30 June 1999)

Changes due to operating activities	Ha	CondHa
Land use change (extent) due to operating activities		
Terrestrial ecosystems	(250)	(61)
Aquatic ecosystems	(111)	(87)
Condition change due to operating activities		
Terrestrial ecosystems	(9)	(24)
Aquatic ecosystems	(159)	(54)
gains and losses due to reappraisals	-	-
Total	(600)	(227)
Ecosystem enhancements due to rehabilitation activities		
Ecosystem enhancements due to management activities (e.g. weed control)		
Total		
Changes due to financing activities		
Ecosystem gains due to acquisitions		
Terrestrial ecosystems	510	77
Aquatic ecosystems	122	67
Ecosystem losses due to disposals/transfers		
Terrestrial ecosystems	(194)	(43)
Aquatic ecosystems	(73)	(57)
Total	365	44
Total changes due to internal activities	(205)	(183)
Changes due to external activities		
Ecosystem degradation due to extreme weather events		
Unexplained changes to condition		
Total		
Net change in ecosystem resources		
Terrestrial ecosystems	66	(53)
Aquatic ecosystems	(164)	(133)
Total	(98)	(183)

Natural capital accounting





One report

Governance
Strategy
Risk
Metrics and targets

Climate TNFD metrics
Natural capital accounts

Natural capital guidance

Strengths

- Simplifies complex space
- Adopts existing accounting conventions
- Considers Nature and Climate together
- Draws on international approaches to environmental accounting (SEEA)
- Enables aggregation
- Promotes comparability

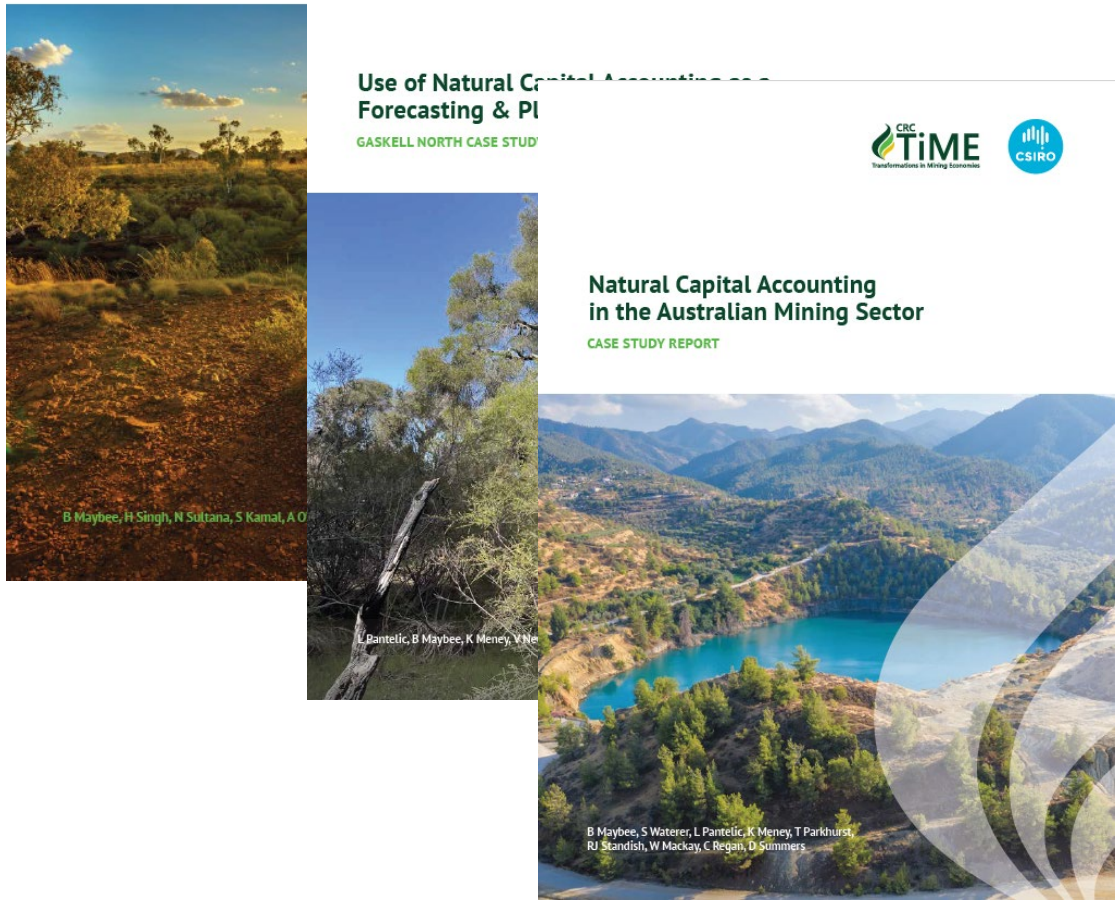
Weaknesses

- Is likely to evolve further
- Doesn't address measurement challenge
  - e.g. condition
- Doesn't address quantitative risk assessment
  - value of assets/revenue etc at risk
- Doesn't attempt to integrate formally with financial accounts

CSIRO

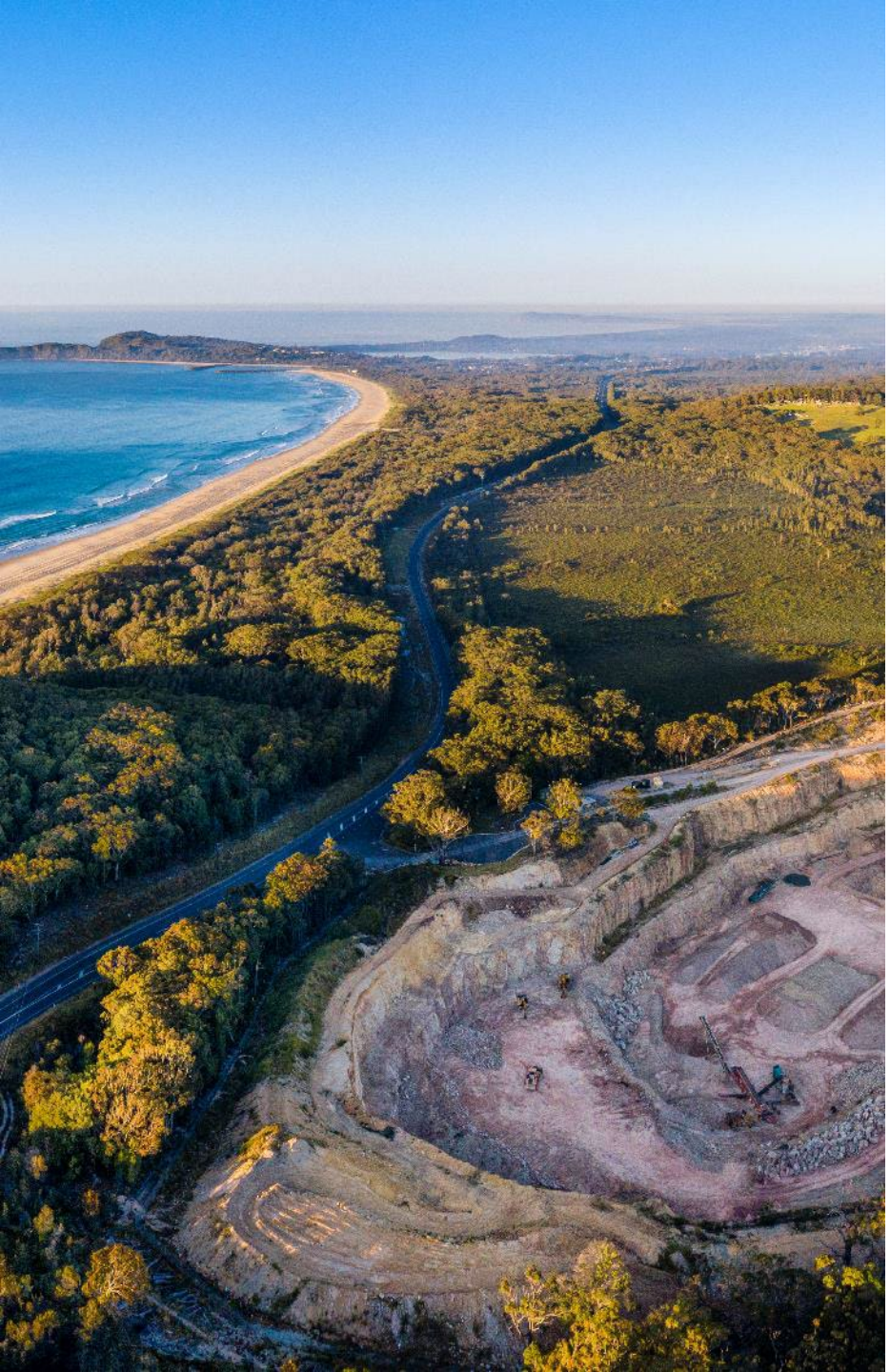
Thankyou


Natural Capital and the
Resources Sector
A practical guide for corporate
natural capital accounting,
assessment and disclosure
O'Grady A.P., Smith, G.S., Horner, C., Maybee B.


Business Case, Gap Analysis and
Roadmap for implem
Natural Capital Accounting in t
Australian Mining Sector
SYRINX
Use of Natural Ca
Forecasting & Pl
GASKELL NORTH CASE STUD
B Maybee, H Singh, N Sultana, S Kamal, A O
L Pantelic, B Maybee, K Meney, Y Ne
Natural Capital Accounting
in the Australian Mining Sector
CASE STUDY REPORT
B Maybee, S Waterer, L Pantelic, K Meney, T Parkhurst,
RJ Standish, W Mackay, C Regan, D Summers

Developing a Business Case for Natural Capital Accounting

Associate Professor Bryan Maybee, CRC TiME



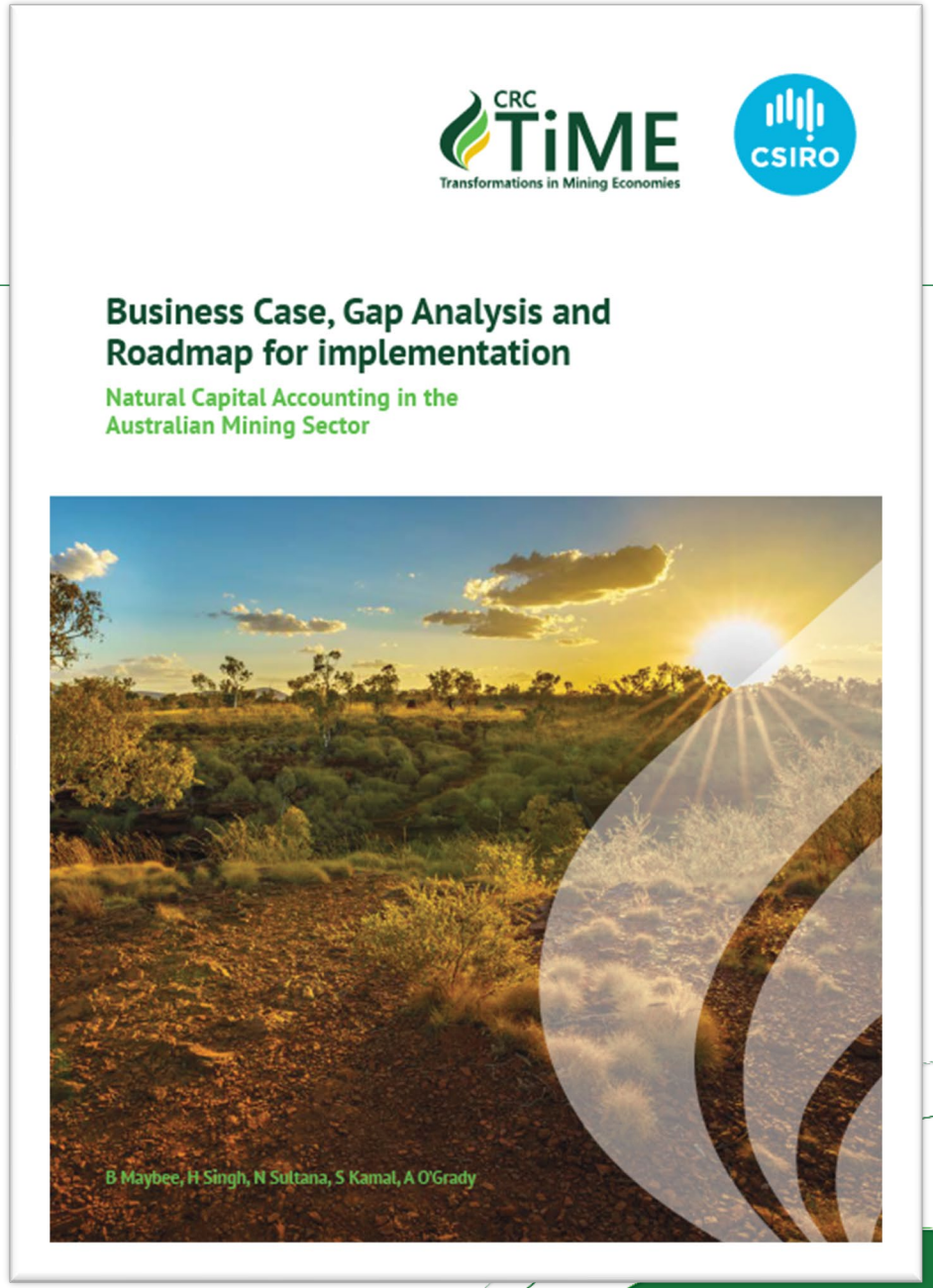
THE BUSINESS CASE FOR NCA & OVERCOMING IMPLEMENTATION CHALLENGES

B. MAYBEE, H. SINGH, N. SULTANA, S. KAMAL, A. O'GRADY

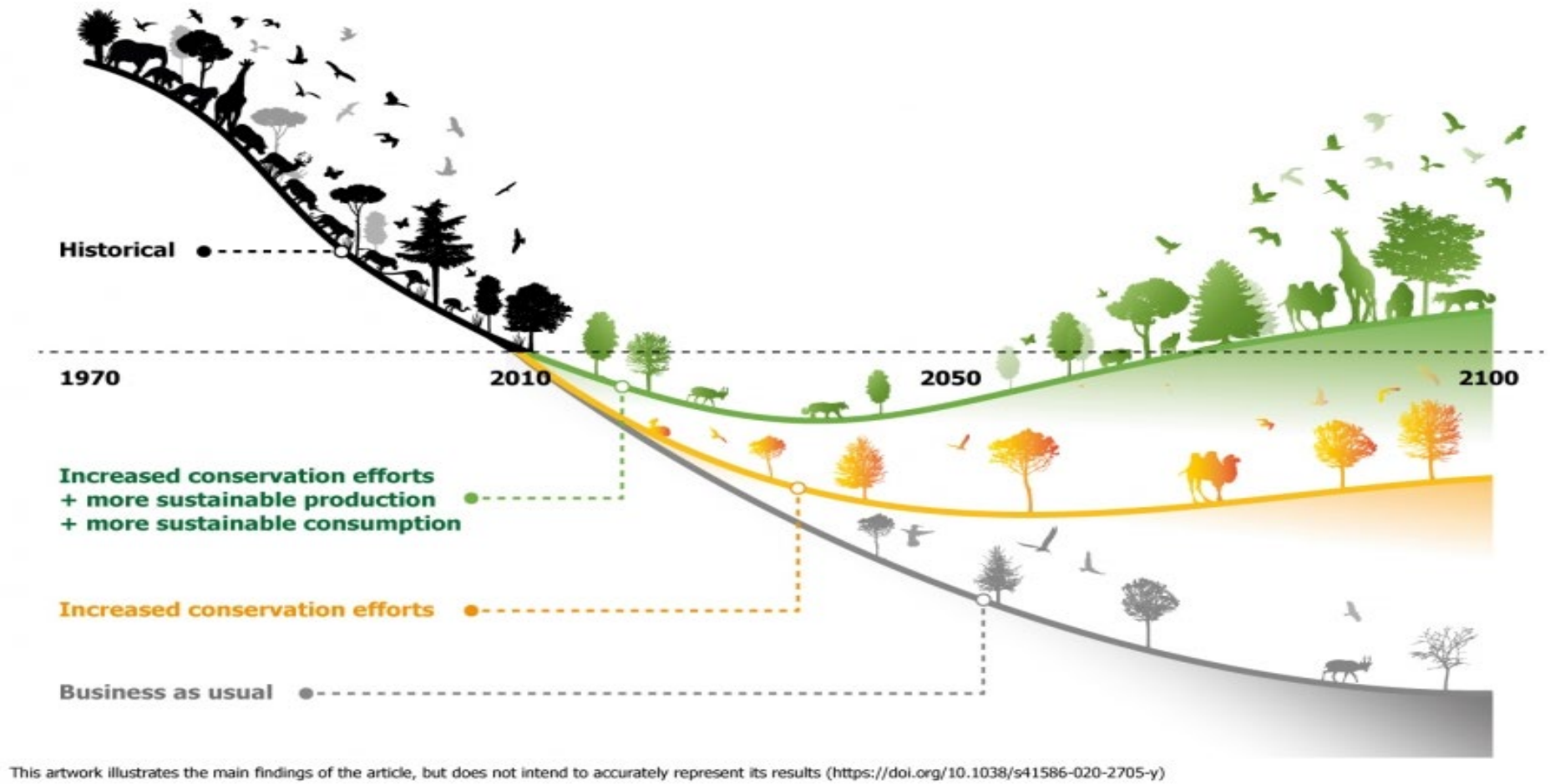
NCA SYMPOSIUM, 17 JULY 2024

CRC TiME
Transformations in Mining Economies

NCA Document Suite



Nature is material



This artwork illustrates the main findings of the article, but does not intend to accurately represent its results (https://doi.org/10.1038/s41586-020-2705-y)

Leclère, D., et al. (2020). Bending the curve of terrestrial biodiversity needs an integrated strategy. *Nature, 585*, ***551-556.***

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Emerging Reporting Environment

Meeting Obligations

Disclosure Focus

Communities and society
- Empowered decision-making
- Conservation and preservation
- Economic diversification
- Improved well-being and quality of life

Investors and financial institutions
- Enhanced risk assessment options
- Sustainable investment options
- Access to green investment opportunities

How implementing Natural Capital Accounting (NCA) helps?

Governments and regulators
- Regulation and compliance
- Informed policy-making
- Sustainable development planning
- Effective resource allocation

Financial Accounting Framework

Accounting Information System

A system for the collection, storage, and processing of financial and accounting data

Financial Accounting

Externally focussed

- Reporting, disclosure, etc.
- Communication of past performance

Process of recording, summarising and reporting past transactions from business operations over a defined period of time

Opportunities from using an Accounting Framework

Accounting Information System

A system for the collection, storage, and processing of financial and accounting data

Financial Accounting

Externally focussed

- Reporting, disclosure, etc.
- Communication of past performance

Managerial Accounting

Internally focussed

- Capital budgeting, analysis of variances, forecasting, etc.
- Strategic decisions

Pract
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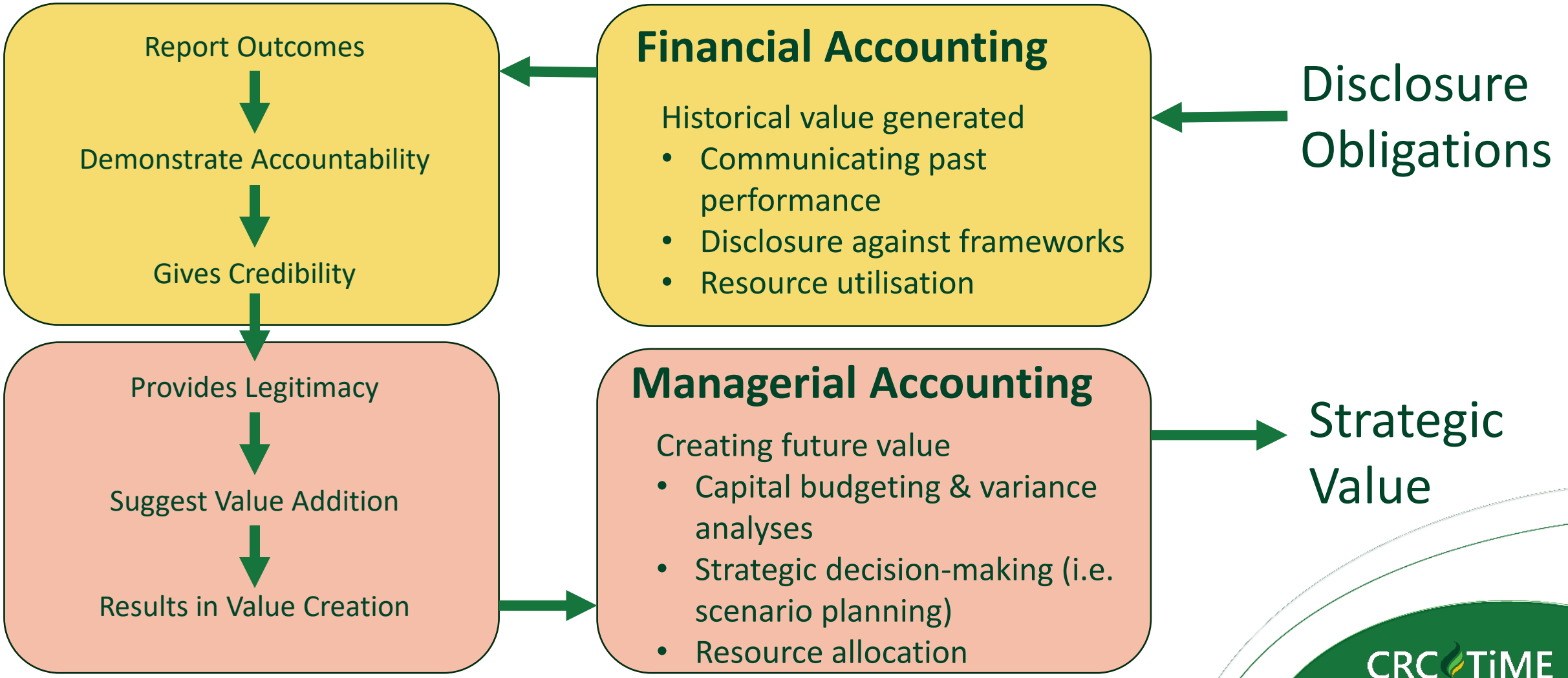
strategic goals

This is the power of NCA

Natural Capital Accounting in the Mining Sector



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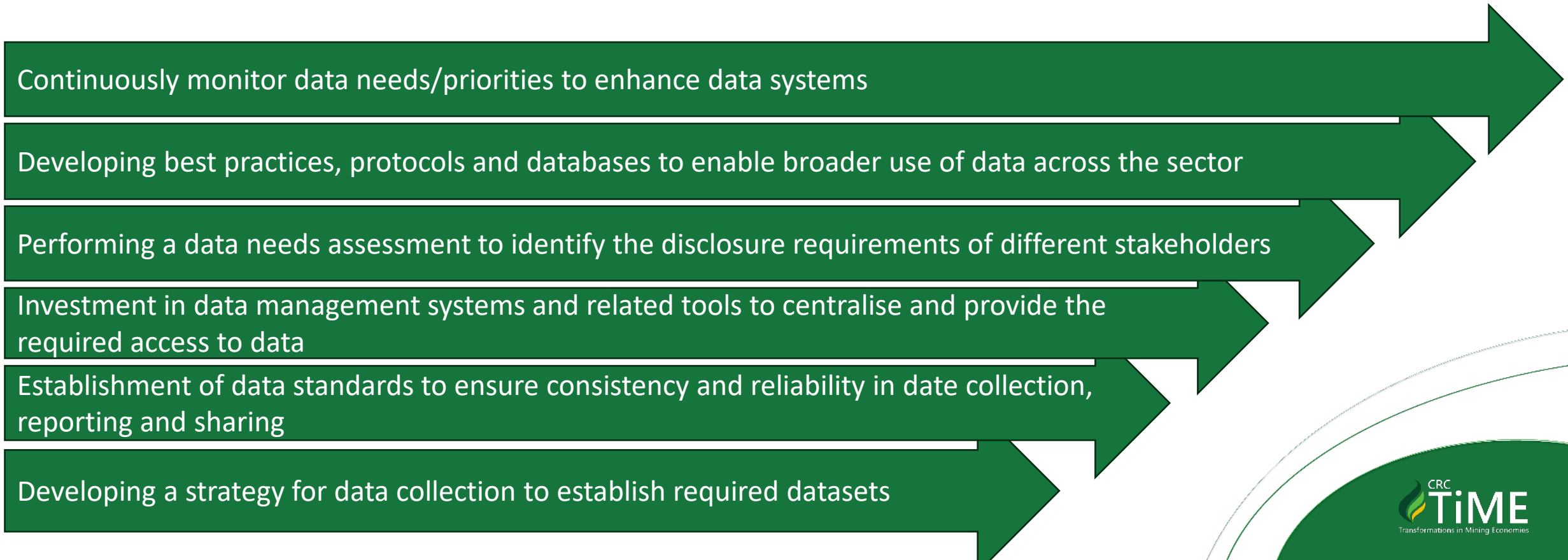
Challenges - Data

- Good data underpins robust NCA
  - provides sound basis for measurement, valuation and disclosure aspects
  - enables future-focussed strategic decision-making
- Requires framing and developing a data strategy for compiling comparable accounts



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Challenges - Valuation

- Improved methods of valuing natural capital and ecosystem services will facilitate industry adoption of NCA
  - methodologies need to include appropriate materiality and risk assessment techniques
  - must recognise unique characteristics of natural assets due to different perspectives of significance and use
- Processes for collection, assessment and communication of information affecting valuation must exist and operate effectively

Testing approaches to ensure that the accounts meet the accounting definitions of useful information

Assessing the importance of different intangible factors and developing approaches that appropriately incorporate them into the valuation of ecosystem services

Developing a framework to quantify the value of ecosystem services as a public good that recognises the different perspectives of stakeholders

Developing record management practices and accounting processes to facilitate preparation of an Ecosystem Change Statement

Developing standardised formats for maintaining and disclosing physical accounts alongside monetary accounts

Standardising approaches to identify Ecosystem Assets and Services, and assess their importance

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Transformations in Mining Economies

Challenges – Capacity and Capability

- Multi-disciplinary teams required to create mining-specific accounts generating financial and non-financial information
  - expertise includes accounting, environmental and ecological science, legal
  - need to satisfy assertions of accuracy, valuation, completeness, existence, and rights and obligations
- Key success factor for uptake and longevity of NCA is continual capacity building to align with changing expectations

Affecting auditing standard-setting to ensure NCA accounts can be competently and independently audited, verified and reported

Preparing guidelines for recording and disclosure of upstream and downstream components of the value chain to gain a complete picture of the industry's impacts and dependencies

Continually upskill existing expertise and filling gaps through a variety of activities, including professional development, targeting training programs, formal education courses, expert speakers, etc.

Building capability and capacity throughout the data ecosystem, including a specific requirement for spatial data analysis expertise

Engaging with Indigenous Australians to gain a complete understanding of the importance and value of natural capital

Engaging with stakeholders to develop understanding of the importance of incorporating natural capital into economic decision-making

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Transformations in Mining Economies

Creating Future Value

Strategic Focus

- Sustainable resource management
- Recognition of natural capital risks
- Better planning practices

Disclosure Focus

Communities and society
- Empowered decision-making
- Conservation and preservation
- Economic diversification
- Improved well-being and quality of life

Investors and financial institutions
- Enhanced risk assessment options
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- Access to green investment opportunities

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- Informed policy-making
- Sustainable development planning
- Effective resource allocation

THANK YOU

www.crctime.com.au

Where do we go from here?

Chris McCombe, MCA

Panel Discussion on next steps

Dr Guy Boggs, CRC TiME
Josh Matthews, WSP
Nic Pollock, K2fly
Renee Young, WABSI

Closing Remarks

Dr Guy Boggs, CRC TiME