Society of Natural Capital Accounting

Comparing Natural Capital Accounting Frameworks: What does the profession need to understand?

Guest presenters
John Finisdore, Sustainable Flows
Joël Houdet, The Biodiversity Footprint Company

Panel
Carter Ingram, Pollination
Carl Obst, IDEEA Group

Chair:
Michael Vardon, Society of Natural Capital Accounting

AEDT (Sydney) Wed 21 Oct, 8:00 am · EDT (New York) Tue 20 Oct, 5:00 pm · CEST (Paris) Tue 20 Oct, 11:00 pm

Better accounts. Better decisions. A sustainable future.

Acknowledgement of Country

The Society of Natural Capital Accounting acknowledges the Ngunnawal and Ngambri peoples, the Traditional Custodians of the land on which the Society is established, and pays respect to their Elders past and present.

We also acknowledge the many Countries from which you join us today. First Nations peoples have cared for these lands and waters for tens of thousands of years, and that knowledge and custodianship go to the heart of what it means to account for nature.

TODAY

Programme

08:00	Welcome, Acknowledgement of Country, Aims of the Society, Scene-setting, and Questions for today	Michael Vardon
08:05	Introductions	Michael Vardon
08:10	Presentation	John Finisdore and Joël Houdet
08:30	Panel discussion	Carter Ingram, Carl Obst, John Finisdore and Joël Houdet
08:45	Questions	Facilitated by Michael Vardon
08:55	Next steps and close	John Finisdore, Michael Vardon

Use the chat for questions. The session is being recorded.

A NEW PROFESSIONAL BODY · INCORPORATED IN AUSTRALIA, 10 AUGUST 2026

Society of Natural Capital Accounting

Sociedad de Contabilidad del Capital Natural (SoNCA)

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1

Raise awareness and understanding

Build understanding of natural capital accounting and its use in real decisions. The System of Environmental-Economic Accounting (SEEA) is our reference framework.

2

Develop professional pathways

A competency framework and recognised continuing professional development first; certification in time. So that natural capital accounting is a career, not a side project.

3

Provide a forum for exchange

An online seminar programme, working groups and an annual meeting for accountants, ecologists, economists and statisticians working with natural capital.

https://naturalcapitalaccounting.org/membership/

A$162 ~~A$180~~ until 30 November 2026
CONCESSION A$81 ~~A$90~~ · students

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The natural capital accounting landscape

Different applications built on the same concepts. SoNCA is for the people working across it.

National and international statistics

ABS, ONS and 90+ countries compile SEEA accounts; EU Regulation 2024/3024; GBF indicators; subnational jurisdictions

Standards for organisations

ISO 14054:2025; BS 8632:2021; NAASB principles (in development); Biological Diversity Protocol; IPSAS 51

Organisation and site accounts

CSIRO SEEA-based organisational accounts, including the balance sheet method; Accounting for Nature

compiles accounts with the SEEA

same asset and condition concepts | *measurement and reporting rules*

same stocks and flows, one entity | *entity boundary, valuation, materiality*

SEEA
concepts, classifications, units and boundaries

Shared foundation: stocks and flows, physical and monetary measures
Extent and condition of natural assets → flows of natural resources and ecosystem services → benefits to people, organisations and the economy

draw on account outputs | *different questions and metrics*

implement and populate the accounts

develop and share methods

Disclosure and decisions

TNFD; ISSB nature (draft); ESRS E4; GRI 101; Natural Capital Protocol

Tools and data

ARIES for SEEA; InVEST; Data4Nature; IUCN Global Ecosystem Typology

Research and practitioner networks

London Group; SEEA communities of practice; Ecosystem Services Partnership

shared concepts — where approaches still differ

Examples only; not exhaustive

Three questions for today

1. How do the NCA frameworks being used in the private sector compare with each other and with the SEEA?

2. What would it take to make them comparable, and where can corporate practice and the SEEA each learn from the other?

3. How do we take this forward?

Better accounts. Better decisions. A sustainable future.

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Today's guest speakers and panellists

John Finisdore
Sustainable Flows



Declaration of interests

- A-Track Advisory Committee
- Natural Asset Accounting Standards Board (NAASB) Reporting Committee

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Joël Houdet
The BiodiversityFootprint Company



Declaration of interests

- Biological Diversity Protocol (lead author)

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Carter Ingram
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Declaration of interests

- A-Track Advisory Committee

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Carl Obst
IDEEA Group



Declaration of interests

- Natural Asset Accounting Standards Board (NAASB) Reporting Committee
- SoNCA Committee

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Presentation

John Finisdore, Sustainable Flows
Joel Houdet, The Biodiversity Footprint Company

SUSTAINABLE FLOWS
Improving Financial & Ecosystem Service Flows

THE BIODIVERSITY FOOTPRINT COMPANY

What is NCA?

Emerging definition seems to measure the state of natural capital.

Organization / source	Term	Definition or formulation	Date/link
Accounting for Nature	Environmental accounting	"Environmental Accounting provides standardised, quantifiable assessments of the state of 'environmental assets'" such as soils, vegetation, wildlife, rivers and marine ecosystems.	2008
EU Bus. & Biod. Platform	Natural capital accounting for business	The 2014 guide treats NCA for business as the family of approaches through which companies account for natural capital.	2014
UK Natural Cap. Committee	Corporate natural capital accounting	"a framework for organisations to take better account of the natural capital they own, depend on or for which they are responsible."	2015
UN SEEA	Natural capital accounting	"an umbrella term covering efforts to use an accounting framework to provide a systematic way to measure and report on **stocks** and flows of natural capital."	2021
BSI – BS 8632:2021	Natural capital accounting	BSI describes NCA as a tool to measure changes in the **stock of natural capital**, incorporating ecosystem-service values into an accounting and reporting system.	2021
Capitals Coalition / Time to Take Stock	Corporate natural capital accounting (CNCA)	"Corporate natural capital accounting is the systematic process of identifying, measuring, recording, summarising and reporting the periodic and accumulated net changes to (a) the biophysical **state of natural capital assets** and (b) the associated values as per complementary value framing perspectives. CNCA requires: a. An asset inventory recognising the biophysical properties and dynamics of each asset category b. Measurement techniques that use spatially explicit data and apply the principle of ecological equivalency (like-for-like) c. Recording rules based on double-entry bookkeeping from financial accounting d. Asset-specific biophysical statements of performance and position e. A defined scope according to organisational and value chain boundaries"	2022
CSIRO Handbook	Natural capital accounting	"Natural capital accounting identifies and records consistent and comparable information on **natural capital assets** and the services provided to the reporting entity and other users."	2023
UNEP / NCAVES	Natural capital accounting	NCA involves using "an accounting framework to systematically measure and report on **natural capital stocks** and flows," treating the environment as an asset essential to the economy and society.	2023
La Notte et al.	CNCA	**Adopts Capitals Coalition's Definition**	2024
ISO – ISO 14054:2025	Natural capital accounting for organizations	ISO describes organizational NCA as a systematic way of collating financial, socio-economic and environmental information about an organization's impacts and dependencies on nature and presenting it in formats familiar to decision makers.	2025

Not an exhaustive list

NCA frameworks used by organisations

All produce accounts of natural capital stocks, flows and/or monetary values.

Group	Framework	Source	Focus
1.	Corporate Natural Capital Accounting (2015)	UK Natural Capital Committee	Corporate
	BS 8632:2021 Natural capital accounting for organizations	British Standards Institution	Corporate
	ISO 14054:2025 Natural capital accounting for organizations	International Organization for Standardization	Corporate
2.	Accounting for Nature Certification	Accounting for Nature	Corporate
3.	Natural Capital Accounting Handbook (2023)	CSIRO	Corporate
	Nature on the balance sheet (Smith et al. 2026)	CSIRO, Francisco Ascui, Sue Ogilvy, and Rayne van den Berg	Corporate
4.	Biological Diversity Protocol	Endangered Wildlife Trust (South Africa)	Corporate
5.	Natural Capital Accounting Principles (NCAP)	Natural Asset Accounting Standards Board (NAASB)	Corporate
6.	SEEA Ecosystem Accounting	United Nations	Government
7.	IPSAS51, Tangible Natural Resources Held for Conservation	International Public Sector Accounting Standards Board	Government

Why use NCA?

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Public sector

1. Integrate nature into the economic analysis
   A. Contribution of nature to GDP
   B. Sectoral planning
   C. Policy development (e.g., Benefit-Cost Analysis)
   D. Others…
2. Manage public lands
3. National reporting (e.g., CBD)
4. Others

Private sector

1. Data for business applications
   a) NNL/NZ (mining)
   a) Disclosures
   b) Supply chain management (Olam), LCA (CGC)
   c) EIAs (infrastructure)
   d) Risk management (investors)
   e) Track the condition of assets (forestry, Forico)
   f) Asset management (Farms of the Future)
   g) And others…. (see Capitals Coalition)
2. Data management (Semantic Commons for Climate, Nature & Economy [CNE])

SUSTAINABLE FLOWS
Improving Financial & Ecosystem Service Flows

Contributed by John Finisdore (Sustainable Flows)

Comparing frameworks

A working definition of CNCA from Time to Take Stock

Four building blocks from Time to Take Stock 2.1 (Capitals Coalition 2022), as 8 criteria

CNCA is…

"the systematic process of identifying, measuring, recording, summarising and reporting the periodic and accumulated net changes to (a) the biophysical state of natural capital assets and (b) the associated values of natural capital to business and wider society."

It puts the going concern of natural capital assets at the core of corporate accounting.

Asset inventory

1. Ecosystem asset register

Measurement: spatially explicit, like-for-like

2. Ecosystem extent
3. Condition / integrity
4. Ecological equivalency

Recording rules

5. Double-entry recording
6. Statements of position and performance

Values and scope

7. Valuation perspective and method
8. Organisational and value-chain boundaries

Sources: Finisdore J., Houdet J., Obst C., Dickie I. (2022) Time to Take Stock v2.1, Capitals Coalition; Houdet (2024).

Headline results

No case study meets the whole definition. Criteria 1, 4 and 5 drive the divergence

Criterion	BHP, CSIRO Handbook (2023), Forico (SEEA EA / BS 8632)	Sibanye-Stillwater (BD Protocol)
1 Asset register	Current land uses (natural vs modified)	Original ecosystem types, even when transformed
2 Extent	Spatially explicit	Spatially explicit
3 Condition	Variables or classes; reference state not always set	Integrity vs reference state → condition-adjusted ha
4 Equivalency	No: land use confused with ecosystem type	Yes: like-for-like by ecosystem type
5 Recording	Single entry: asset ± change	Double entry: six account categories
6 Statements	One table; accumulated losses not shown	Separate position and performance statements
7 Valuation	Monetary ecosystem-service values: P&L, balance sheet	Biophysical; priority ranking and costs of meeting targets
8 Boundaries	Flexible: one site, one estate	All direct impacts of direct operations

Source: Houdet J. (2024) Unpacking Corporate Natural Capital Accounting: BS 8632, BD Protocol and UN SEEA. Comparative analysis of case studies. TBFC.

Criterion 1: asset register

What is recorded as an asset: current land uses or original ecosystems?

CSIRO Handbook (2023)

BS 8632 / SEEA EA

5 categories

Plantation forest, native forest, upland streams, native pastures, and infrastructure and other: natural and human-modified categories listed side by side.

BHP Beenup

SEEA EA

4 classes

Natural (dryland plains, dunes, wetlands), modified or semi-natural (drainage channels, lakes), pasture (802 ha before mining) and artificial (the mine, 361 ha).

Forico

SEEA EA

5,035 ha 'modified'

Eight vegetation communities (e.g. dry eucalypt forest 21,872 ha; rainforest 13,989 ha), plus a separate 'modified land' category.

Sibanye-Stillwater

BD Protocol

25 ecosystem types

From South Africa's national vegetation map, 6 of them threatened. Each listed whether intact or fully transformed (mining, farming, plantations), with the original ecosystem type identified.

Takeaway: SEEA EA / BS 8632 cases account for current land uses; the BD Protocol keeps the original ecosystem type.

Source: Houdet J. (2024) Unpacking Corporate Natural Capital Accounting: BS 8632, BD Protocol and UN SEEA. Comparative analysis of case studies. TBFC.

Criterion 3: condition

Is condition measured against a reference state?

CSIRO Handbook (2023)

BS 8632 / SEEA EA

50% → 60% mature

Variables with no reference state: share of mature plantation forest 50% to 60%; above-ground carbon 70 to 65 tC/ha. Area moved between good, fair and poor classes.

BHP Beenup

SEEA EA

High / medium / low

Land uses rated by class. Dryland plains: 23 ha high before mining, 66 ha medium during mining, 96 ha high after rehabilitation. Pasture stays low throughout.

Forico

SEEA EA

Mean score 73

Vegetation condition scored against benchmarks: 277 assessments. The 4,789 ha scoring below 55 is deducted, leaving 66,458 ha of natural forest habitat.

Sibanye-Stillwater

BD Protocol

676.16 ha eq. left

Integrity scored against a reference state, giving condition-adjusted area. Carletonville Dolomite Grassland: 8,915.86 ha, of which 676.16 ha eq. remain.

Takeaway: rating how well a land use performs is not the same as rating ecosystem integrity against a reference.

Source: Houdet J. (2024) Unpacking Corporate Natural Capital Accounting: BS 8632, BD Protocol and UN SEEA. Comparative analysis of case studies. TBFC.

Criterion 4: ecological equivalency

Can gains and losses be matched like-for-like by ecosystem type?

CSIRO Handbook (2023)

BS 8632 / SEEA EA

–1,000 / +1,000 ha

Native pastures lose 1,000 ha while native forest gains 1,000 ha. The total is unchanged, but which original ecosystem was lost?

BHP Beenup

SEEA EA

–167 ha natural

1991–99: 167 ha of natural ecosystems and 194 ha of pasture converted to mining. Rehabilitation from 1999 adds 250 ha to 'natural ecosystems', with no link to the original types.

Forico

SEEA EA

–4,213 ha

'Natural vegetation' fell from 81,043 ha (2017) to 76,830 ha (2020), not broken down by vegetation community.

Sibanye-Stillwater

BD Protocol

Per original type

Net change tracked for each original ecosystem type (2021 baseline, 2022 update). Extent changes only with scientific evidence that the ecosystem type itself has changed.

Takeaway: mixing up land use and ecosystem type is the critical test for ecological equivalency.

Source: Houdet J. (2024) Unpacking Corporate Natural Capital Accounting: BS 8632, BD Protocol and UN SEEA. Comparative analysis of case studies. TBFC.

Criterion 8: organisational and value-chain boundaries

What does the company account for?

CSIRO Handbook (2023)

BS 8632 / SEEA EA

100,000 ha

Compiled examples on an illustrative estate. BS 8632 sets no minimum scope.

BHP Beenup

SEEA EA

1 site

The Beenup mineral sands closure site: owned and leased land, 1,319 ha in 1991 and 660 ha in 2020.

Forico

SEEA EA

172,328 ha

The whole forestry estate: the forest management unit in 2020.

Sibanye-Stillwater

BD Protocol

All direct operations

All direct impacts of the operations it controls in South Africa and the USA, as the BD Protocol's completeness rule requires. Value-chain boundaries differ from GHG Protocol scopes.

SEEA EA sets no organisational boundary rule; it applies to any accounting area, and the accounting areas could be defined by the companies

Understanding differences matters for accountability under GBF Targets 3 and 15.

Source: Houdet J. (2024) Unpacking Corporate Natural Capital Accounting: BS 8632, BD Protocol and UN SEEA. Comparative analysis of case studies. TBFC.

Adapting financial accounting terms to CNCA

Seven terms, and the question each raises for CNCA (definitions: IASB Conceptual Framework 2018)

1	**Asset**	What natural capital is recognised, and how is it defined?
2	**Liability / obligation**	What does the credit-balance counterpart represent?
3	**Equity**	What does the residual balance represent in biophysical terms, and how is it derived?
4	**Income and expenses**	Which accounts record degradation, restoration and other gains or losses, and how do they reconcile opening and closing balances?
5	**Unit of account**	What is the unit to which recognition and measurement apply?
6	**Position–performance articulation**	How do period changes flow into the accumulated accounts and explain the opening-to-closing position?
7	**Drivers of change**	Where and how are ecosystem changes and their causes recorded?

Two approaches apply double entry to CNCA: Houdet et al. (2020) / BD Protocol and Smith et al. (2026)

Note: Ogilvy et al. 2015, 2018 influential

Sources: Finisdore J., Houdet J. et al. (Draft 3, Oct 2026) Double-entry bookkeeping for CNCA, working draft

Liability / obligation

Both show an adverse position as a credit balance; they differ on what it represents

Term	Shared	Houdet / BD Protocol	Smith (2026)
Liability / obligation	Both make an adverse natural capital position visible through a credit-balance counterpart, and both let restoration reduce that balance.	Accumulated negative impacts record the gap to the reference state in Ha eq. These ‘correspond to' liability accounts but imply no financial liability or settlement obligation.	'Present obligations of the entity to restore natural capital as a result of past events': legal or constructive (e.g., a Nature Positive commitment), possibly owed to society at large. Measured in cond-ha (money optional) Arises only from entity-caused degradation after stewardship begins; discharged by restoration.

Sources: Finisdore J., Houdet J. et al. (Draft 3, Oct 2026) Double-entry bookkeeping for CNCA, working draft

Articulation and drivers of change

Both trace changes in position to recorded events; they differ in how many statements do it

Term	Shared	Houdet / BD Protocol	Smith (2026)
Articulation	Both connect period activity to accumulated or closing balances, so changes in position trace to recognised events.	Periodic net impacts are carried to the Statement of Biodiversity Performance Accumulated net impacts in the Statement of Biodiversity Position	Three linked statements: Ecosystem Change Statement (changes attributed to management, scope change, other factors), Income Statement, and Balance Sheet (accumulated change since stewardship began). The first two jointly explain opening-to-closing balance sheets.
Drivers of change	Both record each ecosystem change (extent and condition) and its cause in journal entries, through the chart of accounts: an audit trail from the ecosystem to the final statements.	Causes (e.g. clearing, restoration, natural disaster) are recorded in journal entries, not summarized in a dedicated statement.	Causes are recorded in journal entries And summed in the Ecosystem Change Statement under management activities, scope changes and other (external) factors. Attribution decides whether a liability arises.

Sources: Finisdore J., Houdet J. et al. (Draft 3, Oct 2026) Double-entry bookkeeping for CNCA, working draft

Questions I would like SoNCA to address

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1. *How do approaches to double entry bookkeeping compare?*
2. *How can national NCA data be used by corporations? (e.g., Pollination Group Ogallala case study)*
3. *How do NCA technology solutions (e.g., ARIES, D4N, InVEST) for organizations compare and what gaps exist?*
4. *What are uses of NCA data in business applications (e.g., LCA, EIA, due diligence, risks analysis, portfolio construction, disclosures) and what gaps exist?*
5. *What can NCA techniques contribute to financial risk assessment?*
6. *What does liability mean from an IFRS/GAAP perspective and how should it be applied to NCA?*
7. *What are the advantages of using semantic data conventions to make data interoperable?*
8. *How can semantic modelling and AI driven valuation be effectively deployed?*

Panel discussion

1. How do the NCA frameworks being used in the private sector compare with each other and with the SEEA?

2. What would it take to make them comparable, and where can corporate practice and the SEEA each learn from the other?

3. How do we take this forward?

Panelists

- Carter Ingram
- Carl Obst
- Joël Houdet
- John Finisdore



Questions and discussion

Facilitated by Michael Vardon

Use the chat

What comes next

Future seminars or a working group on comparing frameworks and related issues?

Other seminars and working groups

Several proposed

A process in place

Draft Code of Conduct

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Thank you to everyone who joined us today

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