

## **Supplementary information**

This supplement contains the following supplementary information:

Table S1: A list of case studies and their references

Table S2: Key characteristics of the 14 type A case studies (Strict ecosystem condition accounts)

A description of every case study.

**Table S1. List of case studies**

Number	Country	Reference
<b>Type A case studies (Strict condition accounts)</b>		
1	Australia	Eigenraam, M., McCormick, F., Contreras, Z. (2016) .Marine and Coastal Ecosystem Accounting: Port Phillip Bay. Report to the Commissioner for Environmental Sustainability. ISBN 978-1-76047-395-2
2	Australia-	Information Paper: An Experimental Ecosystem Account for the Great Barrier Reef Region (2015). Available <a href="#">here</a>
3	Australia	Eigenraam, M., Chua, J., Hasker, J. (2013). Environmental-Economic Accounting: Victorian Experimental Ecosystem Accounts, Version 1.0. Department of Sustainability and Environment, State of Victoria.
4	Australia	Keith, H., Vardon, M., Stein, J., Stein, J., Lindenmayer, D. (2017) Experimental Ecosystem Accounts for the Central Highlands of Victoria (A scientific article is available as Keith, H., Vardon, M., Stein, J.A., Stein, J.L., Lindenmayer, D., 2017. Ecosystem accounts define explicit and spatial trade-offs for managing natural resources. Nature Ecology & Evolution 1, 1683-1692.)
5	Australia	Wentworth Group (2016) Accounting for Nature- A scientific method for constructing environmental asset condition accounts. ISBN: 978-0-9944577-3-8
6	Australia	Varcoe, T., Betts O’Shea, H., Contreras, Z. (2015) Valuing Victoria’s Parks Accounting for ecosystems and valuing their benefits: Report of first phase findings.
7	Canada	Statistics Canada Environment Accounts and Statistics Division (2013) Human Activity and the Environment. Measuring ecosystem goods and services in Canada.
8	Netherlands	Lof, M. P. Bogaart, L. Hein, R. de Jong and S. Schenau, 2019, The SEEA-EEA ecosystem condition account for the Netherlands, Statistics Netherlands and Wageningen University, The Hague; Wageningen, the Netherlands. 88pp.
9	South Africa	Nel, J.L., Driver, A. (2015) National River Ecosystem Accounts for South Africa. Discussion document for Advancing SEEA Experimental Ecosystem Accounting Project. South African National Biodiversity Institute, Pretoria
10	UK	Eftec (2015). Developing UK Natural Capital Accounts: Woodland Ecosystem Accounts. Report prepared for the Department for Environment, Food and Rural Affairs (Defra), March 2015.
11	UK	Khan, J., Din, F. (2015) UK Natural Capital – Freshwater Ecosystem Assets and Services Accounts. Office for National Statistics
12	UK	White, C., Dunscombe, R., Dvaskas, A., Eves, C., Finisdore, J., Kieboom, E., Maclean, I., Obst, C., Rowcroft, P. & Silcock, P. (2015), ‘Developing ecosystem accounts for protected areas in England and Scotland: Main Report’, Department for Food, Environment & Rural Affairs/The Scottish Government
13	UK	Forest Enterprise England (2017) Natural capital accounts. Forestry Commission England
14	UK	Office for National Statistics (2018) UK natural capital: ecosystem accounts for urban areas Initial natural capital accounts containing information about green space in urban areas. Statistical Bulletin

<b>Type B case studies: Accounts that discuss aspects of condition but don't include condition account tables</b>		
15	Australia	Thackway, R., Lesslie, R. (2005) Vegetation Assets, States and Transitions (VAST): Accounting for vegetation condition in the Australian landscape. BRS Technical Report, Bureau of Rural Sciences, Canberra
16	Australia	Smith, B., Summers, D., Vardon, M. (2017) Environmental-Economic Accounting for ACT State of the Environment Reporting – Proof of Concept. Office of the Commissioner for Sustainability and the Environment.
17	EU	UNEP-WCMC (2017) Developing Ecosystem Condition Accounts for the EU and Member States
18	South Africa	Driver, A., Nel, J.L., Smith, J., Daniels, F., Poole, C.J., Jewitt, D., Escott, B.J. (2015) Land and ecosystem accounting in KwaZulu-Natal, South Africa. Discussion document for Advancing SEEA Experimental Ecosystem Accounting Project. South African National Biodiversity Institute, Pretoria
19	Uganda	UNEP-WCMC & IDEEA (2017) Experimental Ecosystem Accounts for Uganda. Cambridge, UK.
20	UK	Office for National Statistics (2017) UK natural capital: developing UK mountain, moorland and heathland ecosystem accounts.
21	UK	Office for National Statistics (2018) UK natural capital: developing semi-natural grassland ecosystem accounts
22	UK	Office for National Statistics (2016) Scoping UK coastal margin ecosystem accounts
23	UK	Dickie I, Evans C and Smyth MA (2015) Scoping the Natural Capital Accounts for Peatland, work package 3 of Report NR0165 for Defra

**Table S2.** Key characteristics of the type A case studies (NA stands for not available). More details are provided in the individual case study descriptions in this supplement

Case study (date)	(1) Realm T: Terrestrial M: Marine IW: Inland water	(2) Ecosystem type or asset	(3) Extent reported	(4) Indicators	(5) Indicator classification	(6) Aggregated index	(7) Reference condition	(8) Spatial unit of assessment	(9) Spatial unit of reporting (accounting area)	(10) Reported values of the accounting table
<b>A1. Port Phillip Bay</b> (2016)	T M	Marine inlets, transitional waters and coastal ecosystems	Yes	See description	No	Yes	Yes	1 ha	Sub-national (geographic areas)	Opening and closing stocks of area under different condition levels
<b>A2. Great Barrier Reef</b> (2015)	M	Shelf, ocean, coral reef system, river catchments	No	See description	No	No	No	Unspecified	Sub-national	Indicator values rescaled between 0 and 100
<b>A3. State of Victoria</b> (2013) (comprehensive)	T IW	Major vegetation groups, wetland, rivers	Yes	See description	Yes	Yes	Yes	1 ha	Catchment	Opening and closing stocks of area under different condition levels
<b>A4. Victoria Central Highlands</b> (2017)	T	Land, Water, Carbon, Timber, Agriculture, Tourism, Biodiversity	Yes	See description	No	No	Yes	NA	Sub-national	Opening and closing stocks of area under different condition levels
<b>A5. Accounting for Nature Trials</b> (2016) (comprehensive)	T IW M	Land, Water, Coasts, Marine, Atmosphere	Yes	See description	Yes	Yes	Yes	NA	Sub-national	Opening or closing stocks of indicator values and index
<b>A6. Victoria's Parks</b> (2015)	T IW M	Native vegetation, Wetlands, Rivers, Marine	Yes	See description	No	Yes	Yes	NA	Sub-national	Opening and closing stocks of area under different condition levels
<b>A7. Canada MEGS</b> (2013)	T	Forest and woodland, agro-ecosystems, urban, and marine inlets, transitional waters and coastal ecosystems	Yes	See description	No	No	No	NA	National	Opening or closing stocks of indicator values
<b>A8. Netherlands</b> (2019)	T IW	Urban, agriculture (crop and grassland), sea, rivers, lakes, forest, heathland, seminatural grassland, fresh water wetlands, dunes and beaches, and other ecosystem types	Yes	See description	Yes	No	No	Different spatial units	National	Opening or closing stocks of indicator values

Case study (date)	(1) Realm T: Terrestrial M: Marine IW: Inland water	(2) Ecosystem type or asset	(3) Extent reported	(4) Indicators	(5) Indicator classification	(6) Aggregated index	(7) Reference condition	(8) Spatial unit of assessment	(9) Spatial unit of reporting (accounting area)	(10) Reported values of the accounting table
<b>A9. South Africa rivers</b> (2015) (comprehensive)	IW	Rivers	Yes	See description	Yes	Yes	Yes	River reaches	National	Complete reporting of all values
<b>A10. UK Woodlands</b> (2015)	T	Woodland	Yes	See description	No	No	No	<1 km <sup>2</sup>	National	Opening or closing stocks of indicator values
<b>A11. UK Freshwater ecosystems</b> (2015)	IW	Rivers and lakes, open waters and wetland	Yes	See description	Yes	No	No	NA	National	Opening or closing stocks of indicator values
<b>A12. PAs in England and Scotland</b> (2015)	T IW M	Farmland, grassland, forest and woodland, open waters wetlands rivers, groundwater, and heathland and sparsely vegetated land, coastal ecosystems	No	See description	Yes	No	No	NA	Sub-national	Opening or closing stocks of indicator values
<b>A13. Forest Enterprise England</b> (2017)	T FW	Woodland but also grassland, mountains, moors and heathland, enclosed farmland, freshwater, urban, coastal	No	See description	Yes	No	Yes	NA	Sub-national	Opening or closing stocks of indicator values
<b>A14. UK Urban areas</b> (2018)	T	Urban areas	Yes	See description	No	No	No	NA	National	Opening and closing stocks of area under different condition levels

## Brief description of the case studies

### Case study 1. Australia: Marine and Coastal Ecosystem Accounting: Port Phillip Bay

This report contains accounts consistent with the SEEA. It reports extent and condition and illustrates the accounts with example tables where condition is reported as opening and closing scores under different condition levels. However, the condition accounts shown are hypothetical, not based on actual data. Lack of ecosystem condition data and spatially referenced data was a key constraint in populating the accounts for ecosystem assets. The accounts for ecosystem services and benefits are more fully developed.

#### Specific information about the reporting of the condition account

Ecosystem or asset types	Marine inlets, transitional waters and coastal ecosystems
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Marine and terrestrial
Spatial unit for analysis	Basic Spatial Unit – seems to be a 1 ha grid although the size of the BSU is not explicitly stated
Spatial unit of reporting	5 geographic areas within Port Phillip Bay
Condition indicators	Nitrogen load and water quality index Currently developing condition indicators for 4 marine ecosystem types
Aggregated index	An example account is presented suggesting 5 condition classes with a composite condition score ranging from 0 to 10
Classification of indicators	5 classes
Reference levels	No (although reference condition of “10”?)
How is condition reported	Opening and closing stocks of area under different condition levels (ha)

## Case study 2. Australia: An Experimental Ecosystem Account for the Great Barrier Reef Region

This account presents summary information by indexing measures of condition of terrestrial and marine ecosystems, as well as the flow of river loads, to provide an overview of the ecosystem characteristics within the region. A rationale as to why these indicators have been selected to assess ecosystem condition is lacking. It refers to the SEEA EEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Shelf and ocean ecosystems, coral reef system, also river catchments
Ecosystem extent reported	No
Ecosystem condition reported	Yes
Realm	Marine, inland water
Spatial unit of analysis	Not specified
Spatial unit of reporting	Whole Great Barrier Reef region, not spatially disaggregated
Condition indicators	For rivers: River loads (solids, nitrogen, phosphorus); For marine: coral, water quality, seagrass and fish numbers – although it is not clear what the metric was for “coral” or “seagrass”; For terrestrial: NPP.
Aggregated indicator	No
Classification of indicators	No
Reference levels	No (but a baseline year of 2007/8 is used)
How is condition reported	Indicator values rescaled between 0 and 100 whereby 100 is the baseline value for a selected year. The condition table compares ecosystem condition based on indicators relative to a baseline year.

### Case study 3. Australia: Victorian Experimental Ecosystem Accounts

A set of asset accounts including the extent and condition for major vegetation types, wetlands and rivers with table reporting the condition for a specific year against a reference year (1750). All tables report condition as a single, aggregated index (condition in 1750 = 100). It refers to the SEEA EEA.

#### Specific information about the reporting of the condition account

Ecosystem or asset types	Major vegetation groups, wetland systems, rivers
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial, inland water
Spatial unit of analysis	Basic Spatial Unit - seems to be a 1 ha grid although the size of the BSU is not explicitly stated
Spatial unit of reporting	10 catchment regions within State of Victoria; also bioregions within State of Victoria
Condition indicators	Habitat hectares approach based on 10 indicators (Large trees, Tree (canopy) cover, Understorey (non-tree) strata, Lack of weeds, Recruitment, Organic litter, Logs, Patch size, Neighbourhood, Distance to core area)
Aggregated indicator	Mean condition per hectare for terrestrial ecosystem types based on the habitat hectares approach. Condition for wetland and for rivers based on an Index of Wetland Condition and an Index of Stream Condition, respectively. References to separate documents for calculation of these indices. The index of wetland condition is based on the weighted sum for 6 sub-index scores. The sub index scores are derived from 13 metrics. The index of stream condition is built in a similar way: 5 sub-indices and 23 metrics. Each river reach assessed is given an overall ISC score of between 0-50. This score is then categorized into one of five broad condition bands – excellent, good, moderate, poor or very poor.
Classification of indicators	Indicators assorted to site conditions and landscape context. Index of wetland condition and stream condition is built on sub-indices which constitute a classification.
Reference levels	Yes, the 1750 undisturbed situation is set to 1
How is condition reported	Opening and closing stocks of area under different condition levels (ha). The accounts report either at subnational scale (vegetation types and different types of wetland) or at basin scale (for rivers). The accounts report extent and an aggregated index for ecosystem condition for different years relative to the 1750 reference year.



#### **Case study 4. Australia: Experimental Ecosystem Accounts for the Central Highlands of Victoria**

This study presents Experimental Ecosystem Accounts for the Central Highlands of Victoria. It is a test of how the SEEA tables can be populated with existing data. The starting point of the report is quantifying the extent and condition of assets rather than of ecosystem types. The study refers to the SEEA EEA. The bulk of the report deals with ecosystem service accounts.

#### **Specific information about the reporting of the condition account**

Ecosystem or asset types	Land, Water, Carbon, Timber, Agriculture, Tourism, Biodiversity
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes but only for forests
Realm	Terrestrial, inland water
Spatial unit for analysis	
Spatial unit of reporting	Sub national
Condition indicators	No condition indicators as such but different sub groups for assets (e.g., types of forest and age classes) could be used to infer condition
Aggregated indicator	No
Classification of indicators	No
Reference levels	The 1750 situation.
How is condition reported	The table contains data from 1990 until 2015. The table reports the area of different woodland types and breaks the surface area values down over different cohorts, which could be used to infer ecosystem condition.

## Case study 5. Australia: Accounting for Nature- A scientific method for constructing environmental asset condition accounts

This report is a step by step guide with real case examples of how to assess condition and structure a condition account. The study refers to SEEA and includes table structure, method and indicators for condition accounts, with examples of condition tables for South East Queensland.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Five asset classes: Land (e.g. native vegetation, soil), Water (e.g. rivers, wetlands), Coasts (e.g. estuaries, beaches), Marine (e.g. reefs, seagrass), Atmosphere (e.g. air quality)
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial, inland water, marine
Spatial unit for analysis	
Spatial unit of reporting	National and sub-national
Condition indicators	Nitrogen, sediment, and phosphorous loads; Physical/chemical index; Chlorophyll-a; Dissolved Oxygen; Total Nitrogen; Total Phosphorus; Turbidity; Biological Health Rating; Mixing Plots; $\delta^{15}N$ ; Foreshore/riparian habitat extent; Total Foreshore/riparian habitat extent; various biological habitat health indices
Aggregated indicator	Yes, Econd, a composite indicator between 0 and 100
Classification of indicators	Not formal classification but recognition of ecological processes, biodiversity, physical/chemical
Reference levels	1788 situation (=100)
How is condition reported	The account reports the indicator values, aggregated values and the composite indicator Econd as opening and closing stock per ecosystem type in combination with extent information

## Case study 6. Australia: Valuing Victoria’s Parks Accounting for ecosystems and valuing their benefits

This account covers the total area of parks and reserves in Victoria and reports ecosystem condition for various asset types. The report refers to SEEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Native vegetation, Wetlands, Rivers, Marine
Ecosystem extent reported	yes
Ecosystem condition reported	yes
Realm	Terrestrial, inland water, marine
Spatial unit for analysis	
Spatial unit of reporting	Subnational
Condition indicators	For each ecosystem type an aggregated indicator is calculated based on specific metrics (Vegetation score, index of wetland condition is a hierarchical index on a 10-point score scale based on six key characteristics that define wetlands, namely wetland catchment, physical form, hydrology, soils, water properties and biota; index of stream condition is based on a 50-point score scale and is made up of five sub-indices describing the condition of a river reach, namely hydrology, streamside zone, physical form, water quality and aquatic life; Marine condition based on Parks Victoria’s marine monitoring program and marine report cards which assesses condition of key habitats across multiple parks, as follows: VG = Very Good, F = Fair
Aggregated indicator	Index per ecosystem type
Classification of indicators	No
Reference levels	No but probably dependent on the construction of the index; the vegetation score takes 1750 as reference
How is condition reported	Extent and condition reported for areas under different levels of protection (using the IUCN red list of ecosystem classification) and per ecosystem type for different subtypes

## Case study 7. Canada: Measuring ecosystem goods and services in Canada

The report considers ecosystem condition as “ecosystem quality” (page 19 of the report) which is measured as human landscape modification. Landscape modification indicators presented in detailed tables in an appendix, but not as a condition account. The report includes an accounting table on ecosystem quality. Condition is measured using a set of indicators which are reported for different sub-drainage areas.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Forest and woodland, agro-ecosystems, urban, and marine inlets, transitional waters and coastal ecosystems
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial, inland water and marine
Spatial unit of analysis	
Spatial unit of reporting	National
Condition indicators	Degree of modification from natural state (human landscape modification): five measures of ecosystem quality: landscape type, natural land parcel size, distance to natural land parcel, barrier density and population density
Aggregated indicator	N/a
Classification of indicators	N/a
Reference levels	N/a
How is condition reported	Indicator values

## Case study 8. Netherlands: The SEEA-EEA ecosystem condition account for the Netherlands

This rapport describes spatial analyses and data, providing insight in condition indicators for air, water, soil, vegetation and biodiversity. Pressure indicators such as acidification and nutrification of water and soils are also presented. Ecosystem condition and ecosystem extent together determine the amount and type of ecosystem services that they can generate. Therefore the current report should be considered alongside the other publications on ecosystem accounting. The report refers to the SEEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Urban, agriculture (crop and grassland), sea, rivers, lakes, forest, heathland, seminatural grassland, fresh water wetlands, dunes and beaches, and other ecosystem types
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial, inland water, marine
Spatial unit of analysis	Mix of spatially explicit data and national statistics
Spatial unit of reporting	National
Condition indicators	Tree cover, shrub cover, low vegetation cover, tree height, carbon stock, NPP, % protected area, characteristic species, LPI, structure and function indicator, soil organic matter, chemical, biological and ecological water quality indices, water transparency, total P and N in water, air pollutant concentrations (PM10, PM2.5, NO2, SO2)
Aggregated indicator	Some of the condition indicators are actually aggregated indicators
Classification of indicators	Vegetation, Biodiversity, Water, Air, Soil
Reference levels	For some indicators yes, for other no
How is condition reported	The condition account reports indicator values together with the extent per ecosystem type

## Case study 9. South Africa: National River Ecosystem Accounts

This report links condition accounts to extent accounts and presents a fairly complete reporting of indicators, aggregated indicators and a composite index. The study refers to SEEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Rivers
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Inland water
Spatial unit for analysis	River reaches (at quaternary and sub-quaternary catchment level)
Spatial unit of reporting	National, also sub-national (Water Management Area)
Condition indicators	Ecological condition indicators (Flow, water quality, instream habitat, riparian habitat),
Aggregated indicator	Aggregated ecological condition category (natural state and three classes or levels of modification) and ecological condition index
Classification of indicators	Implicit typology
Reference levels	Natural state (ecological condition index =100) while the other states are defined based on percentiles
How is condition reported	Complete reporting (indicator values, aggregated values, index, + linked to the extent account in km)

## **Case study 10. United Kingdom. Developing UK Natural Capital Accounts: Woodland Ecosystem Accounts.**

This report is part of a series of DEFRA and ONS (Office for National Statistics) reports on accounts of various ecosystem types in the UK. It describes the account referring to the SEEA EEA.

### **Specific information about the reporting of the condition account**

Ecosystem or asset types	Woodland
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial
Spatial unit for analysis	High spatial resolution (gridded data sets used <1km <sup>2</sup> )
Spatial unit of reporting	National
Condition indicators	Extent of species type and volume, age, biomass stock, carbon biomass stock, Site of Special Scientific Interest extent, woodland in flood risk areas, soil carbon stocks
Aggregated indicator	No
Classification of indicators	No
Reference levels	No as per principle: The reference condition should not be adopted and changes should simply be measured as differences between opening and closing stocks
How is condition reported	Asset account with combined information on extent and condition. As a closing stock (indicator values)

### Case study 11. United Kingdom: Freshwater Ecosystem Assets and Services Accounts.

This report is part of a series of DEFRA and ONS (Office for National Statistics) reports on accounts of various ecosystem types in the UK. It describes the account referring to the SEEA EEA.

#### Specific information about the reporting of the condition account

Ecosystem or asset types	Rivers and lakes, open waters and wetland
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Inland water
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	Ecological condition of wetlands is based on Wetland birds, Mean species richness, Mean total nitrogen stock, Mean soil carbon concentration, Accessible wetlands (population with access to wetlands within X kilometres) For open waters: mean reservoir stock, river flow, surface water status, and accessible open waters (population with access to open waters within X kilometres)
Aggregated indicator	Yes for open waters (surface water status is an aggregated index required under the EU water framework directive)
Classification of indicators	Ecological condition, soil and access
Reference levels	
How is condition reported	Asset account: extent of wetlands + values of condition indicators per year of reporting; asset account for open waters with percentage area under a particular status



## **Case study 12. United Kingdom: Developing ecosystem accounts for protected areas in England and Scotland**

This study contains a series of accounting tables for different ecosystem types situated within protected areas. It refers to the SEEA. The technical annex of about 150 pages gives a substantial amount of detail especially on ecosystem services.

### **Specific information about the reporting of the condition account**

Ecosystem or asset types	Farmland, grassland, forest and woodland, open waters wetlands rivers, groundwater, and heathland and sparsely vegetated land, coastal ecosystems
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial, inland water and marine
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	A mix of indicators (see technical annex) for Biomass/carbon, biodiversity, soil quality, water quality (water framework directive), access and conservation status
Aggregated indicator	No aggregation
Classification of indicators	Yes: biomass, biodiversity, soil and water quality, accessibility and conservation status
Reference levels	To some extent (e.g. for indicators on the WFD or other EU directives)

### **Case study 13. United Kingdom: Natural capital accounts for assets managed by the public forests estate (PFE)**

This report published an account for natural assets on land managed by the public forest estate (PFE). It does not refer to the SEEA.

#### **Specific information about the reporting of the condition account**

Ecosystem or asset types	Focus on woodland but including accounting information for other asset types managed by the PFE: grassland, mountains, moors and heathland, enclosed farmland, freshwater, urban, coastal
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial and freshwater
Spatial unit of reporting	National
Condition indicators	A mix of aggregated indicators (5 status classes + individual indicators on birds, forest structure, carbon, standing stock, spatial configuration, accessibility)
Aggregated indicator	Yes: for woodland and other asset types 5 status classes
Classification of indicators	There is a grouping of indicators but somewhat inconsistent for the different asset types)
Reference levels	No but a baseline is used and some indicators which are measured under EU legislation have reference values.
How is condition reported	A mix of aggregated indicators as a percentage and indicator values; condition reported together with extent

## Case study 14: United Kingdom: Initial ecosystem accounts for urban areas

This report is part of a series of DEFRA and ONS (Office for National Statistics) reports on accounts of various ecosystem types in the UK. It describes the account referring to the SEEA EEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	urban areas
Ecosystem extent reported	yes
Ecosystem condition reported	yes
Realm	terrestrial
Spatial unit of reporting	national
Condition indicators	condition of sites of special scientific interest (SSSI) sites and number of sites awarded Green Flag status; also accessibility and proximity of green space
Aggregated indicator	SSSI indicator are aggregated indicators
Classification of indicators	No
Reference levels	No (but there is a favourable and unfavourable level for the first indicator)
How is condition reported	Linked to extent accounts and broken down over two condition classes

### **Case study 15. Australia: Accounting for vegetation condition in the Australian landscape**

This document describes a method for estimating ecosystem condition based on the modification of vegetation. No accounting table is presented. However, the method can be used to assess different ecosystem types and to break down their extent over different degrees of modification. Although the term “accounting” appears in the title and in the document, there is no reference to “ecosystem accounts” or SEEA and there are no accounting tables.

#### **Specific information about the reporting of the condition account**

Ecosystem or asset types	Heathland and shrub, cropland, forest and woodland
Ecosystem extent reported	No
Ecosystem condition reported	No
Realm	Terrestrial
Spatial unit for analysis	
Spatial unit of reporting	
Condition indicators	Degree of modification from natural state and non-native vegetation cover
Aggregated indicator	7 status classes of vegetation cover
Classification of indicators	
Reference levels	
How is condition reported	Area of different classes of vegetation status

## Case study 16. Australia: Environmental-Economic Accounting for ACT State of the Environment Reporting – Proof of Concept

This report presents accounts on land, environmental condition, biodiversity, water, air emissions, solid waste and environmental expenditure. Chapter 3 deals with “environmental condition accounts”, including for land and water ecosystems. It includes condition scores for a range of indicators and categories, reported in graphs rather than condition account tables. The study refers to SEEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Land and water
Ecosystem extent reported	Yes, land accounts are reported
Ecosystem condition reported	Yes
Realm	Terrestrial, Inland water
Spatial unit of assessment	Water: river reaches
Spatial unit of reporting	Land: Subnational (Australian Capital Territory, ACT) Water: three catchment areas within the ACT Land: tree cover, soil exposure, leaf area, river inflow, inundation and carbon uptake
Condition indicators	Water: chemical composition, macro-invertebrate diversity and riparian condition of natural and managed waterways, based on the data from the Catchment Health Indicator Program (CHIP) Land: Environmental Condition Score (ECS).
Aggregated indicator	Water: The CHIP scores and the individual indicators are scored from one to five. A score of 1 signifies an ‘excellent’ condition system, 2 a ‘good’ condition, 3 a ‘fair’ condition, 4 a ‘poor’ condition and 5 is ‘degraded’.
Classification of indicators	
Reference levels	
How is condition reported	Status and trends data are presented as figures.

## Case study 17. European Union. Developing Ecosystem Condition Accounts for the EU and Member States

This report presents bird accounts based on the reporting under Art.12 of the EU Birds Directive and species accounts based on the reporting under Art.17 of the EU Habitats Directive. The accounts are not directly usable as condition accounts but should be used as species accounts.

### Specific information about the reporting of the condition account

Ecosystem or asset types	MAES typology for ecosystems for the EU with 7 terrestrial types, 1 freshwater and 4 marine
Ecosystem extent reported	No
Ecosystem condition reported	No, instead species accounts are published
Realm	Terrestrial, Inland water, Marine
Spatial unit of reporting	Biogeographical regions of the EU
Condition indicators	No
Aggregated indicator	Yes, species conservation status and bird conservation status which are aggregated indicators based on several sub assessments
Classification of indicators	No
Reference levels	No
How is condition reported	The number of species assessments over three conservation status classes

### Case study 18. South Africa: Land and ecosystem accounting in KwaZulu-Natal

The focus of this report is on presenting land accounts but the tables contain information about the extent of each reported area (biome, vegetation type, and municipality) under natural or degraded state, which could form the basis for a condition account. The study refers to the SEEA.

#### Specific information about the reporting of the condition account

Ecosystem or asset types	Vegetation types, biomes
Ecosystem extent reported	Yes
Ecosystem condition reported	Yes
Realm	Terrestrial
Spatial unit for analysis	1 hectare grid
Spatial unit of reporting	Sub-national
Condition indicators	
Aggregated indicator	A proposal for an indicator with three levels based on degree of modification from natural state
Classification of indicators	
Reference levels	Yes (the natural state)
How is condition reported	Reported together with the extent account under different levels of condition (natural state versus degraded); assessment based on land cover and land use. Not reported as an explicit ecosystem condition account.

### Case study 19. Uganda: Experimental Ecosystem Accounts

This report presents extent and biodiversity accounts. The extent accounts includes some information on condition (linked to degree of modification from natural based on land cover classes), which could be used as a starting point for a condition account. The study refers to the SEEA

#### Specific information about the reporting of the condition account

Ecosystem or asset types	Grassland, Forest and woodland, and wetland
Ecosystem extent reported	Yes
Ecosystem condition reported	No
Realm	Terrestrial
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	Species richness and biodiversity values are used for species accounts
Aggregated indicator	Red list index (for species accounts)
Classification of indicators	
Reference levels	
How is condition reported	Indicator values (number of species and red list index); not linked to the extent account



## Case study 20. United Kingdom: UK natural capital: developing UK mountain, moorland and heathland ecosystem accounts

This article scopes the development of ecosystem accounts for mountains, moorlands and heathlands and discusses several methodological challenges arising from the unique characteristics of these habitats. The document contains an extent account but no condition account. Yet, the scoping paper provides relevant information for developing condition accounts. A set of indicators for condition is proposed with a rationale as to why to include them. The article refers to the SEEA EEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Mountains, moorlands and heathlands
Ecosystem extent reported	Yes
Ecosystem condition reported	No
Realm	Terrestrial
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	Carbon content, Soil ammonia and nitrogen levels, Specialist bird populations, Mammal populations, Species richness scores, Invertebrates:, Sites of Special Scientific Interest (SSSI) and Areas of Special Scientific Interest, (ASSI) condition status, Wildfire, Managed burning, Water quality, Proximity of human habitation to MMH habitat, Length of National Trails, Volume of sheep grazing, Volume of air pollutants
Aggregated indicator	No
Classification of indicators	Seven dimensions of quality for which condition can be indicated. The dimensions are as follows: relevant volume estimates, biodiversity indicators, soil indicators, ecological condition indicators, spatial configuration, access, management practises, Managed burning
Reference levels	Not applicable
How is condition reported	Not applicable

## Case study 21. United Kingdom: UK natural capital: developing semi-natural grassland ecosystem accounts

This article scopes the development of ecosystem accounts for semi-natural grasslands and discusses several methodological challenges arising from the unique characteristics of these habitats. The document contains no final accounting tables. Yet, the scoping paper provides relevant information for developing condition accounts. A set of indicators for condition is proposed with a rationale as to why to include them. The proposed indicators are also connected to key ecosystem services. For most of the proposed data no or limited data is available. The article refers to the SEEA EEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Semi-natural grasslands (acid grassland, neutral grassland, calcareous grassland, purple moor grass and rush pasture)
Ecosystem extent reported	No (but different data sources and statistics about extent are reported)
Ecosystem condition reported	No
Realm	Terrestrial
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	Plant species richness, Characteristic species, Invertebrate abundance, Cutting and grazing, Sites of Special Scientific Interest, and Areas of Special Scientific Interest, Grazing intensity, Air quality, Naturalness of water levels, Proximity to insect pollinated crops, Fragmentation, Access
Aggregated indicator	
Classification of indicators	Soil indicators Biodiversity indicators Management Indicators Ecological Condition Indicators Spatial Configuration Indicators
Reference levels	Not applicable
How is condition reported	Not applicable

## Case study 22. United Kingdom: Scoping UK coastal margin ecosystem accounts

This article scopes the development of ecosystem accounts for coastal margins. The document contains no final accounting tables. Extent is estimated based on a number of studies and predictions up till 2060. The scoping paper also proposes a set of indicators for developing the condition account. The article refers to the SEEA EEA.

### Specific information about the reporting of the condition account

Ecosystem or asset types	Sand dunes, shingle, machair, salt marches, coastal lagoons and seacliffs
Ecosystem extent reported	No (but different data sources and statistics about extent are reported)
Ecosystem condition reported	No
Realm	Terrestrial
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	Carbon stock in the soil, different biodiversity indicators, Designated areas, SSSI condition status, Blue flag status, Compliance with the Bathing Water Directive, Good status under the EU water framework directive, Access to coastal margins
Aggregated indicator	
Classification of indicators	Soil Biodiversity Conservation status Water Access
Reference levels	Not applicable
How is condition reported	Not applicable

### Case study 23. United Kingdom: Scoping UK coastal margin ecosystem accounts

This note scopes the development of a peatland account within the developing UK environmental accounts. Peatland is defined as the presence of deep peat soils according to national definitions, i.e. organic soils of at least a minimal depth. The note cites the SEEA.

#### Specific information about the reporting of the condition account

Ecosystem or asset types	Peatland
Ecosystem extent reported	No
Ecosystem condition reported	No
Realm	Terrestrial
Spatial unit for analysis	
Spatial unit of reporting	National
Condition indicators	NA
Aggregated indicator	The note proposes a list of potential condition categories based on specific land cover (going from near natural to modified, presence of woodland, fens and cropland) assessed together with pressures on peatland and management practices in order to infer condition.
Classification of indicators	
Reference levels	Not applicable
How is condition reported	Not applicable