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SEEA EEA Revision: Status of work on Accounting for Ecosystem extent and condition

Introduction to draft Chapters 3, 4 & 5 for SEEA EEA Virtual Expert Forum

23 June 2020



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Chapter 3: Spatial units for ecosystem accounting

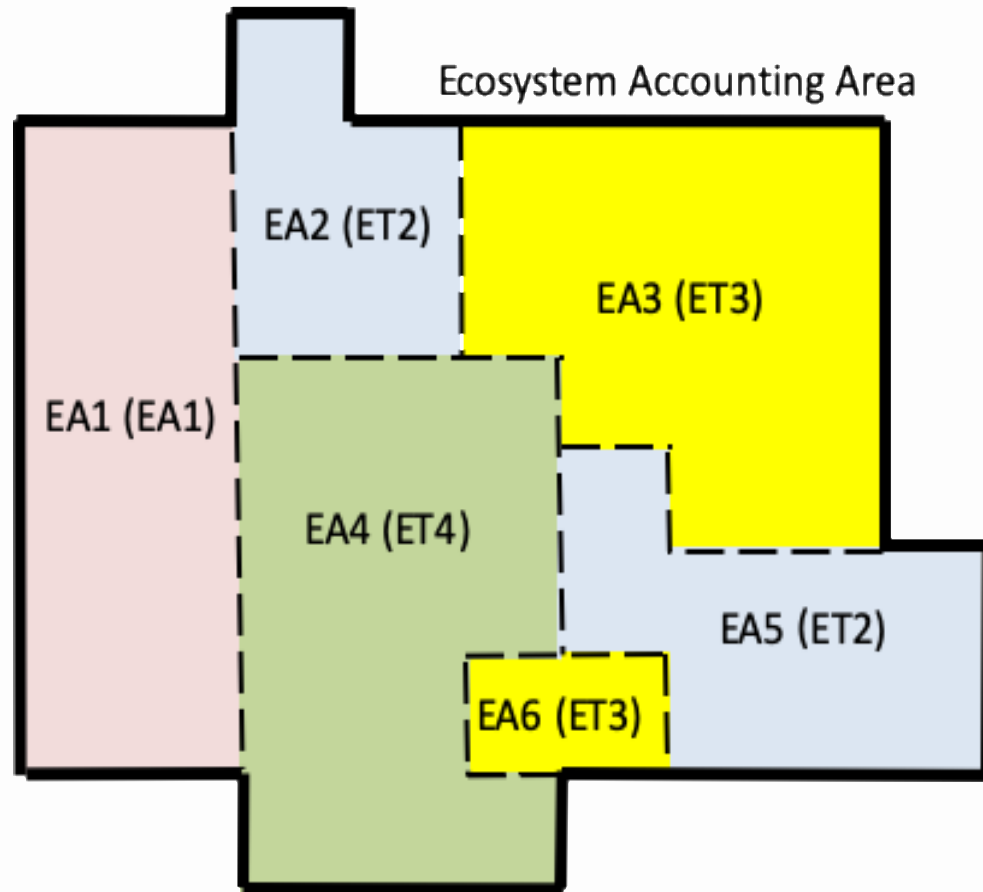


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Chapter 3: Key aspects and issues

- **Ecosystem assets (EA)** provide a statistical representation of ecosystems building on the CBD definition
- **Ecosystem accounting area (EAA)** provides a boundary around a set of EA
- Proposed boundaries in relation to marine, subterranean & atmosphere
- Treatments with respect to linear features and complex mosaics
- **EA classified by ecosystem type (ET)** – IUCN Global Ecosystem Typology as a reference classification
- Delineation of EA should focus on ecological aspects – limited link to ecosystem use, recommend to go beyond land cover and include climate and landform (e.g. soil type, geomorphology)
- Basic spatial unit (BSU) is an operational choice

Relationships between spatial units



IUCN – Global Ecosystem Typology

Realms (and transitional areas)	Biomes
Terrestrial	T1 Tropical–sub-tropical forests
	T2 Temperate–boreal forests & woodlands
	T3 Shrublands & shrubby woodlands
	T4 Savannas and grasslands
	T5 Deserts and semi-deserts
	T6 Polar-alpine (cryogenic)
	T7 Intensive land-use
Freshwater	F1 Rivers and streams
	F2 Lakes
	F3 Artificial wetlands
Marine	M1 Marine shelf
	M2 Pelagic ocean waters
	M3 Deep sea floors
	M4 Anthropogenic marine
Transitional areas	TF1 Palustrine wetlands
	FM1 Transitional waters
	MT1 Shorelines
	MT2 Supralittoral coastal
	MT3 Anthropogenic shorelines
	MFT1 Brackish tidal



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Chapter 4: Accounting for ecosystem extent



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Chapter 4: Key aspects and issues

- Describes structure of ecosystem extent account
 - > Accounting entries – distinguishing natural and managed changes
 - > Ecosystem types – comparison at IUCN GET Ecosystem Functional Group (EFG) level
- Changes in extent – conversions
 - > Links to delineation of EA
 - > Links to measurement of ecosystem condition

Ecosystem extent account

Realm		Selected ecosystem types (based on Level 3 - EFG of the IUCN Global Ecosystem Typology)																		TOTAL			
		Terrestrial						Freshwater			Marine				Transitional								
Selected Ecosystem Functional Group (EFG)		Tropical-subtropical lowland rainforests	Boreal and temperate montane forests and woodlands	Seasonally dry tropical shrublands	Trophic savannas	Semi-desert steppes	Ice sheets, glaciers and perennial snowfields	Croplands	Permanent upland streams	Large permanent freshwater lakes	Large reservoirs	Seagrass meadows	Epipelagic ocean waters	Continental and island slopes	Submerged artificial structures	Tropical flooded forests and peat forests	Deepwater coastal inlets	Rocky shores	Coastal shrublands and grasslands	Artificial shores	Coastal river deltas	TOTAL	
		T1.1	T2.1	T3.1	T4.1	T5.1	T6.1	T7.1	F1.1	F2.1	F3.1	M1.1	M2.1	M3.1	M4.1	TF1.1	FM1.1	MT1.1	MT2.1	MT3.1	MFT1.1		
Opening extent																							
Additions to extent																							
Expansions																							
Managed expansion																							
Natural expansion																							
Upward reappraisals																							
Reductions in extent																							
Regressions																							
Managed regression																							
Natural regression																							
Downward reappraisals																							
Net change in extent																							
Closing extent																							



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Chapter 5: Accounting for ecosystem condition



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Chapter 5: Key aspects and issues

- Condition measured using focus on ecological characteristics and ecological integrity
- 3 stage approach involving different accounts that progressively
 - > Recording variables for key characteristics
 - > Establishing reference levels and indicators
 - > Normalization and aggregation
- SEEA Ecosystem condition typology to group types of characteristics
- Reference levels and reference conditions
 - > Natural and Anthropogenic depending on ET

SEEA Ecosystem Condition Typology

	ECT groups	ECT classes
Ecosystem condition	Abiotic ecosystem characteristics	1. Physical state characteristics (including soil structure, water availability)
		2. Chemical state characteristics (including soil nutrient levels, water quality, air pollutant concentrations)
	Biotic ecosystem characteristics	3. Compositional state characteristics (including species-based indicators)
		4. Structural state characteristics (including vegetation, biomass, food chains)
		5. Functional state characteristics (including ecosystem processes, disturbance regimes)
	Landscape level characteristics	6. Landscape and seascape characteristics (including landscape diversity, connectivity, fragmentation, embedded semi-natural elements in farmland)

Chapter 5: Challenges

- Developing general guidance on variables, indicators and reference levels by ecosystem type (ET)
- Establishing approaches to aggregation
 - > Within ecosystem assets (i.e. across indicators)
 - > Across EA of the same ET
 - > Across ET within an ecosystem accounting area
- Clarifying the links to biodiversity concepts and measures
- Linking to measures of ecosystem extent and accounting for ecosystem conversions
- Linking to measures of ecosystem capacity and ecosystem services



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Consultation topics



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Key topics

- Definition of EA and EAA and measurement boundaries
- Use of IUCN GET as a reference classification
- Recording changes in extent and condition
- 3 stage approach to ecosystem condition measurement
- Approach to defining reference conditions
- Role and design of the Ecosystem Condition Typology



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Thank you



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