Developing EU ecosystem condition accounts – state of play

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Structure of presentation

a) Approach to selecting condition parameters against an initial set of criteria

b) Brief summary of condition accounts currently in development

c) Concluding comments on challenges and open questions

Current list of key issues to consider in selecting condition parameters:

The following issues are regarded important at EU level:

- The condition parameters should match critical parameters for ecosystem condition identified in recent MAES work
- As far as feasible condition parameters to be chosen that are applicable and comparable across all MAES ecosystem types
- Where appropriate or necessary ecosystem-specific condition parameters should be included
- The overall number of condition parameters per ecosystem type should not be too high (e.g. in the range of 3 – 5)
- The condition parameters finally chosen should be underpinned by regular data sets that show trends at

Overall approach to reviewing condition parameters

MAES Ecosystems/ Condition theme	Urban	Crop land	Grassland	Woodland and forest	Heathland and shrub	Sparsely vegetated land	Inland wetlands	Rivers and lakes	Marine inlets and transit. waters	Coastal	She
Biodiversity	(✓)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nutrient pressure	(✓)	✓	✓	(✓)	(✓)	(✓)	✓	✓	✓	✓	✓
Soil status related		✓	✓	✓	(✓)	(✓)					
Freshwater related								✓	✓	✓	✓
Marine related									(✓)	✓	✓
Urban related	✓										

Concrete proposal of condition parameters for 3 MAES ecosystem types – example only!

The proposed condition parameters have been chosen to

- match important condition issues highlighted in EU MAES reports
- link to EU environmental legislation where possible and,
- correspond to the premises in slide 3 above

Year/ account	Cropland						Woodland and forest						Rivers and lakes		
Condition parameters	Biodiversity			Nutrient pressures		Soil carbon	Biodiversity			Nutrient pressures		Soil carbon	Good ecological status (WFD)		
	Reporting	EBCC data	Proxy for landscape	N	P		Reporting	EBCC data		N	P		Biological	Hydro-logical	Chemical

Current state of play in EU – status of September 2018

- MAES ecosystem pilot studies have identified many relevant condition parameters, often 30 – 40 and up to 90 parameters per ecosystem type
- It is not planned, nor possible, to include that many parameters per condition account
- Current tests focus on condition parameters of widespread importance and with links to EU policy targets / reporting
- These are: bird species diversity, spatial N-balance and freshwater water quality

Comparing the pilot accounts under development

- Bird species diversity – top down approach based on Birds Directive reporting, every 6 years, spatial insight limited; tests ongoing with point-sampled data (see paper by Steve King)
- Freshwater condition – approach based on EU Water Framework Directive reporting, every 6 years, valid for water basin level; based on a sophisticated, inter-calibrated index for determining good 'ecological status'
- Spatial N-accounts – focuses on pressure indicator, requires spatial modelling of agric. data to develop fine-grained N-input to ecosystems, 10 input data sets in total, few are 'regular'

=> substantial diversity of data inputs and approaches

Comments on challenges and open questions

- The work on condition accounts is only at the beginning
- Many more parameters are proposed than are underpinned by (suitable) data
- Work on MAES ecosystem pilots to end 2019 will provide substantial additional insight into what is feasible or not
- Critical challenge will be to develop spatial data sets that can reliably be matched to the European ecosystem patchwork
- Progress will depend on availability of suitable data and/or capacity to convert them into ecosystem condition accounts
- A number of conceptual points to be resolved, e.g. link to ecosystem capacity / ES flow

Thank you for your attention.

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Options for deriving an overall measure for ecosystem condition parameters for individual MAES ecosystem types

Year/ account	Open Sea					Year/ account	Woodland and forest					Rivers and lakes		
Condition parameters	Biodiversity			Nutrient pressures		Soil carbon	Condition parameters	Biodiversity		Nutrient pressures		Soil carbon	Good ecological status (WFD)		
	Reporting	EBCC data	Proxy for landscape	N	P			Reporting	EBCC data	N	P		Biological	Hydro-logical	Chemical
2000	100			100		100	2000	100		100		100	100	100	100
2006	98			98		99	2006	103		98		90	101	99	99
2012	102			99		103	2012	100		98		94	100	97	101
Accounting result 2000 – 2012 per parameter	102			101		103	Accounting result 2000 – 2012 per parameter	100		102		94	100	97	101
Evolution of parameters for 2000 – 2012	+2.0 %			+1.0%		+3.0%	Evolution of parameters for 2000 – 2012	0.0%		+2.0		-6.0%	0.0%	-3.0%	+1.0%
				+ 2.0						- 1.66				- 0.66	
Potential simplification	↑			–		↑	Potential simplification	–		↓		↓	–	↓	–
Alternative summing up	Strong positive trend							Strong negative trend					Moderate negative trend		

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Some reflections on creating one value per condition

- Do we need to come up with one value of condition per ecosystem type?
- Yes, if we want to develop one number for bio-physical trends of natural capital in Europe / any given region
- No, if the purpose is understanding better what are the key impacts on ecosystems / the most critical trends
- If we want that one number, when to use an arithmetic mean, when qualitative summing up?
- An arithmetic mean appears reasonable when you sum up like with like (e.g. various measures of state of biodiversity).
- Otherwise it seems better to use qualitative summing up