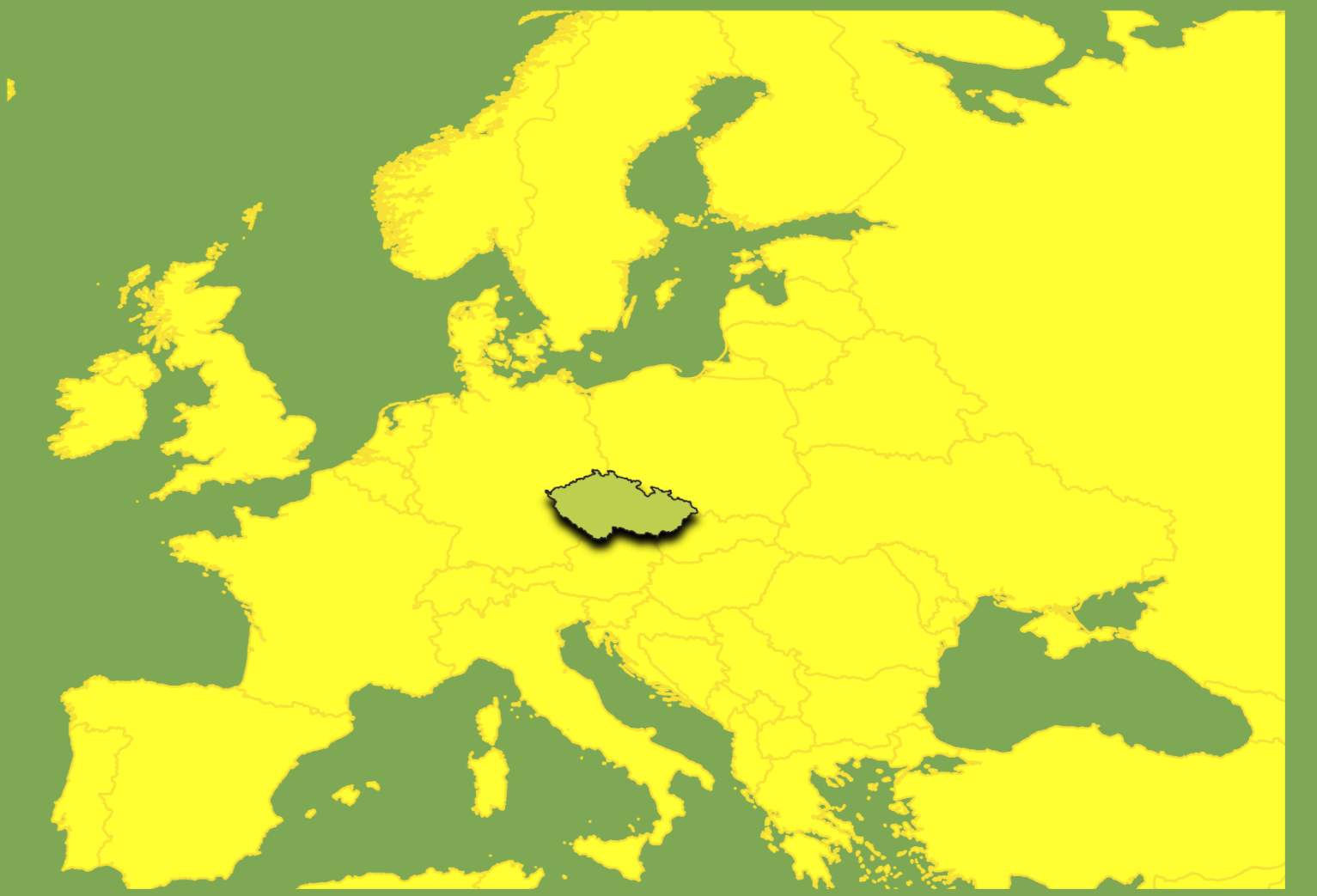


Natural capital accounting in the Czech Republic

Introduction

In the Czech Republic, MAIA supported accounts include extent account and ecosystem services accounts. Ecosystem services accounts has been focusing on carbon account (biophysical and monetary), water purification account (biophysical and monetary) and nature-based recreation account (monetary). Beside that, we tested the application of value transfer approach to ecosystem accounting and water retention model. Ecosystem accounting will become a component of the environmental-economic accounts reported by the Czech Statistical Office.



Ecosystems extent

Main data source is Corine land cover data set from Copernicus land monitoring program

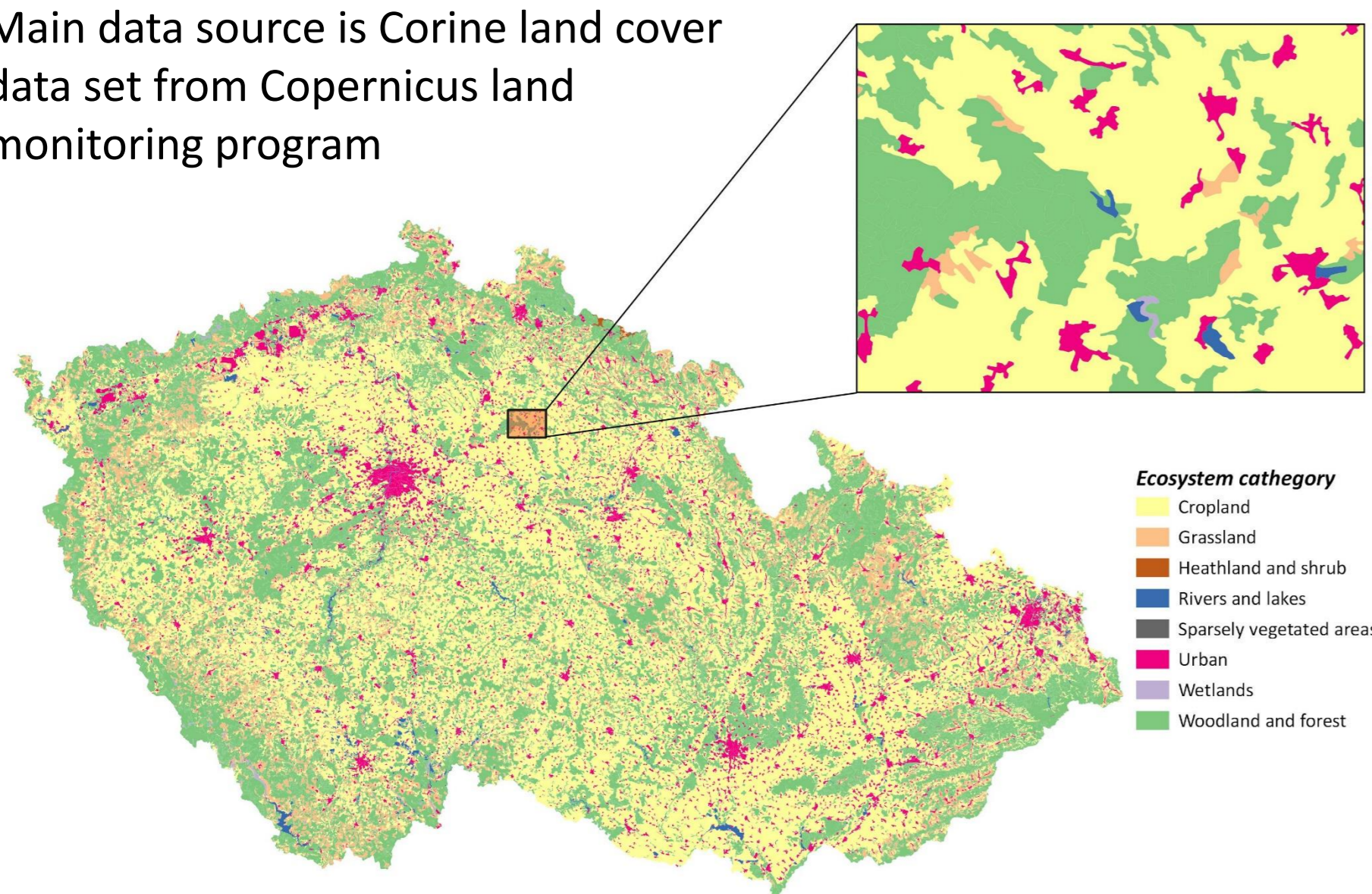
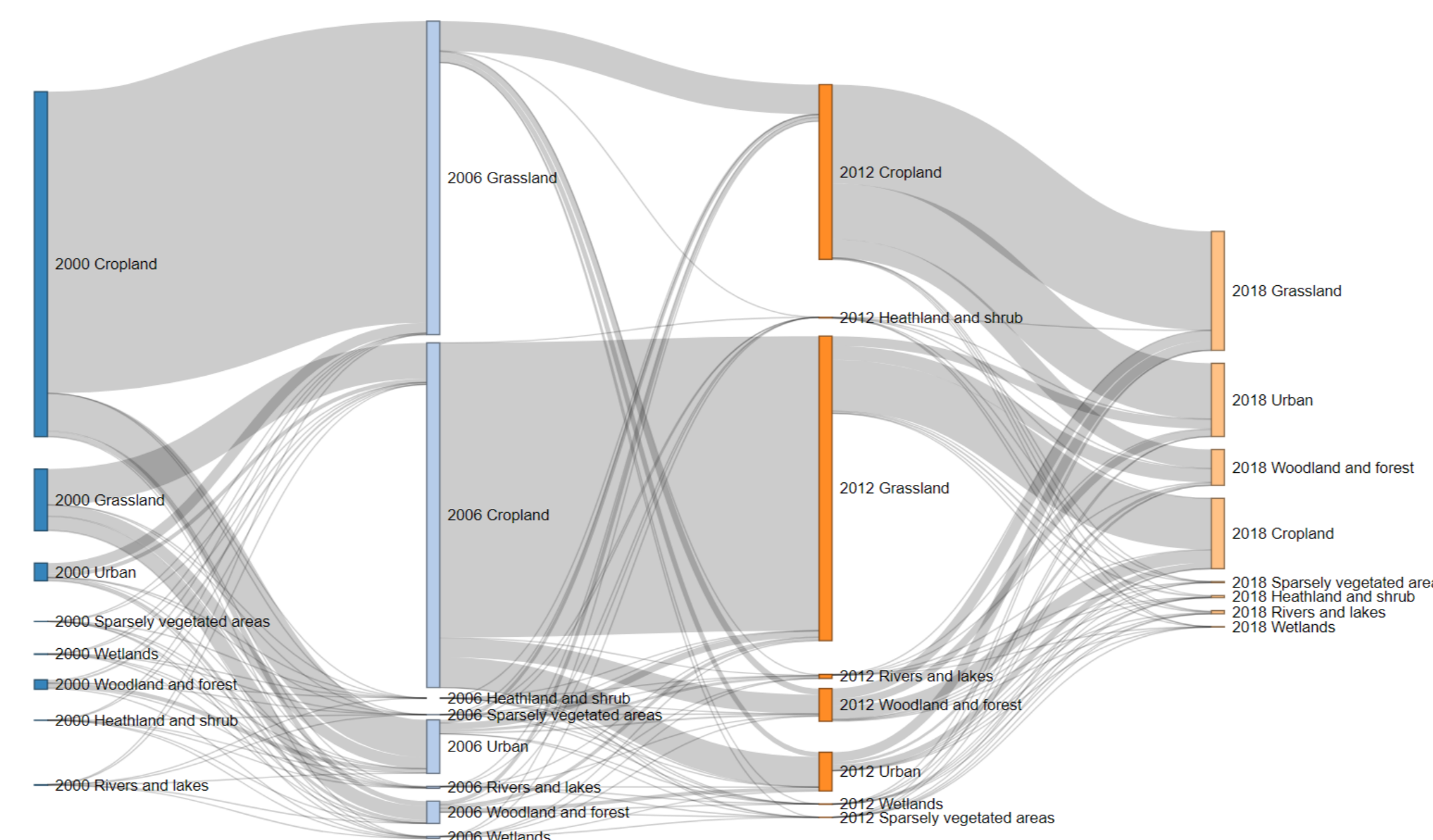


Diagram of changes between ecosystem classes

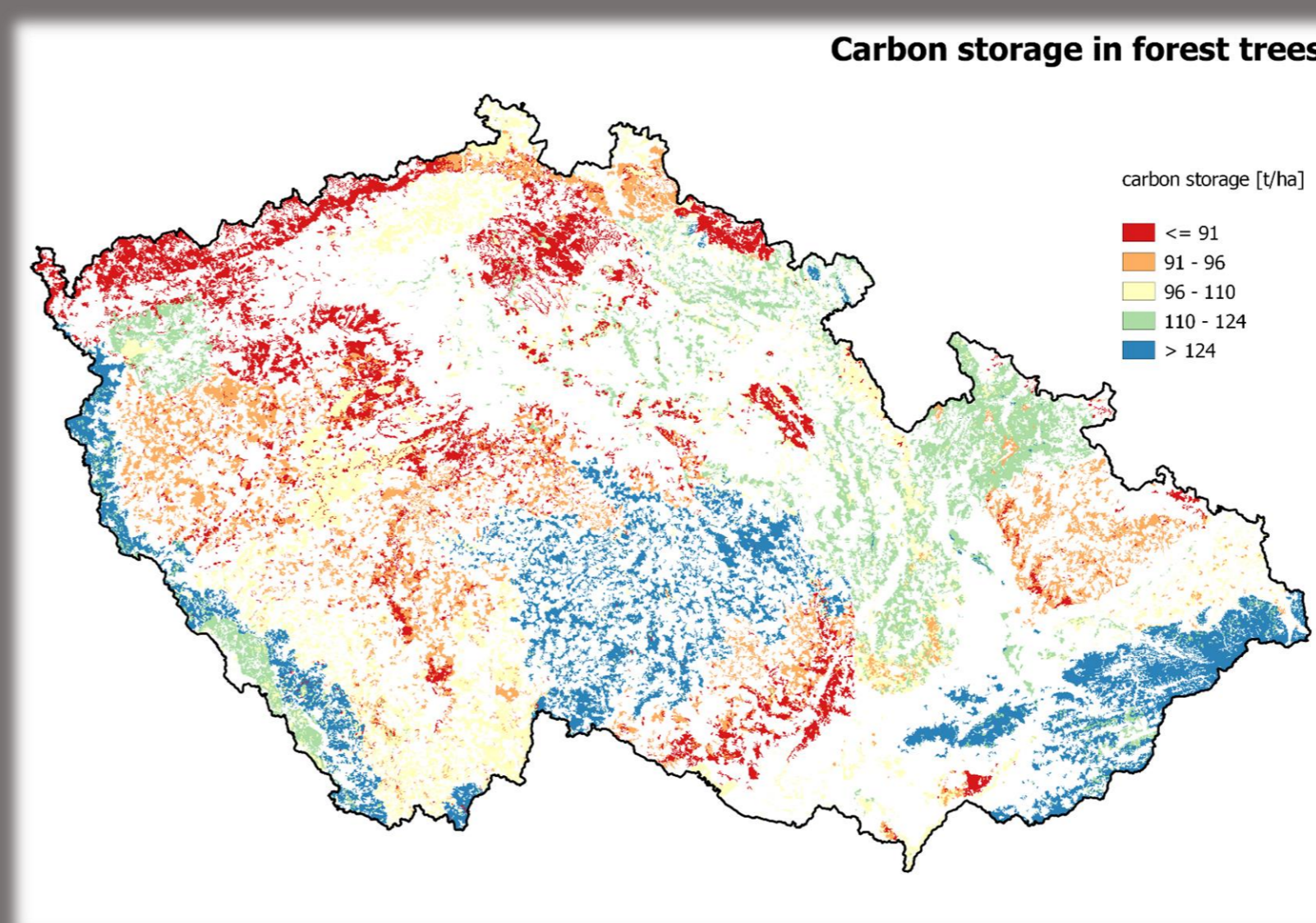
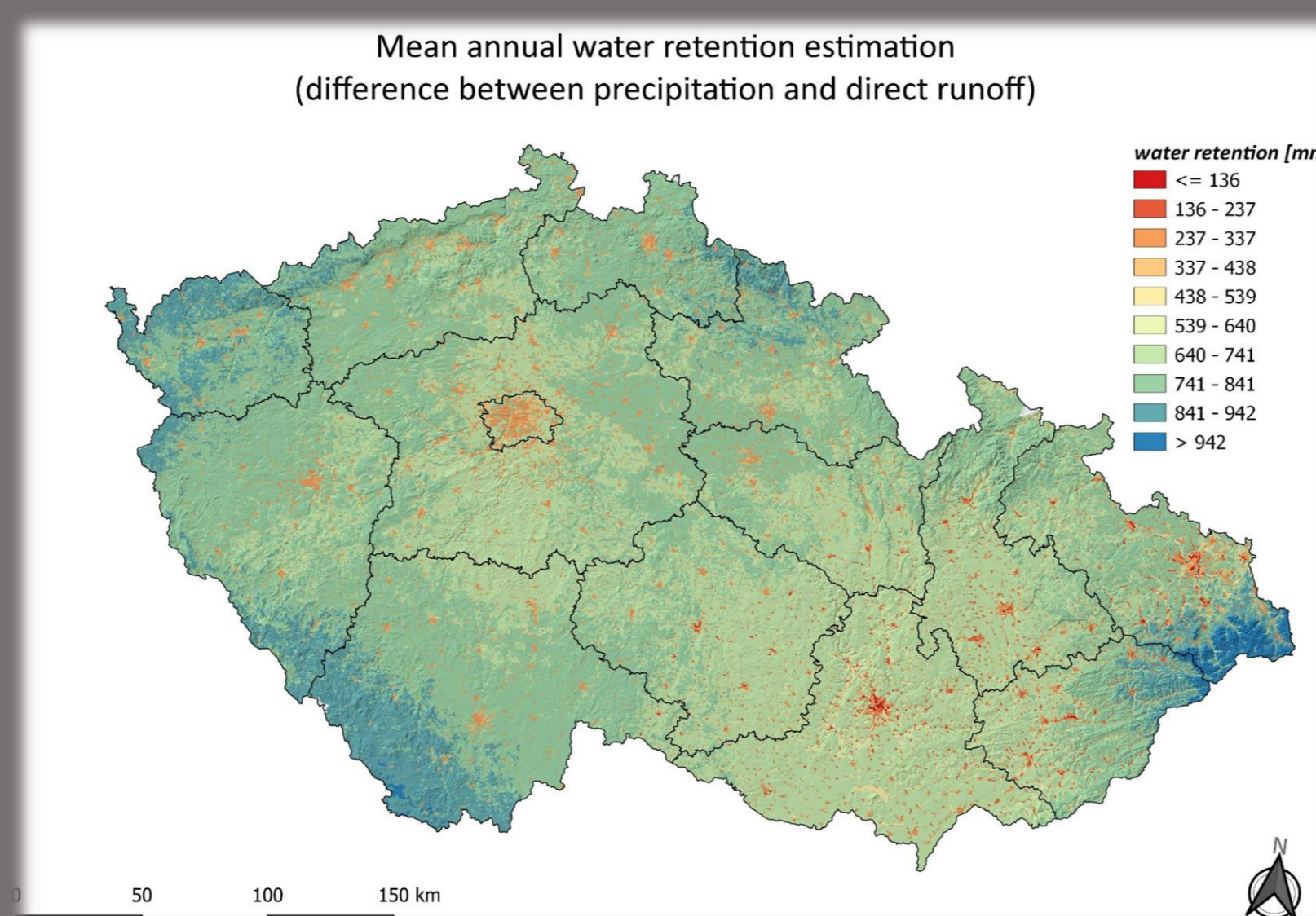


Ecosystem extent accounting table, 2012 - 2018

Ecosystem type	Urban	Cropland	Grassland	Woodland and forest	Heathland and shrub	Sparsely vegetated areas	Wetlands	Rivers and lakes	Total
	Opening extent	509797	3703831	819866	2782873	1825	285	10689	57488
Additions to extent									
Expansions									
Managed expansion	23118	32878	34230	100515	590	342	107	893	192673
Natural expansion	23118	32878	33683	100515	51	155	88	887	
Reductions to extent	0	0	547	0	539	187	19	6	
Regressions									
Managed regression	7523	62697	22331	99591	160	61	87	223	192673
Natural regression	7523	62697	21769	98975	77	57	56	221	
Net change in extent	15595	-29819	11899	924	430	281	20	670	
Closing extent	525392	3674012	831765	2783797	2255	566	10709	58158	7886654

Water retention

- Testing of hydrological model application for water budget estimation on a national scale
- Main output is yearly retained water in mm (avoided direct runoff) for hydrological response units



Carbon account

- Carbon account presents biocarbon supply and use
- Carbon stock in forest trees from wood volume statistics
- Monetary carbon accounts are based on value transfer, SCC and MAC

Nature motivated tourism

- Uses (i) Tourism Satellite Account data and (ii) two surveys conducted with tourists in the Czech Republic
- Determines portion of tourism related spending in Czechia that could be attributed to nature motivated trips
- Estimated for (a) all trips and (b) trips that were for recreation only

	2018	2019	2020
Tourism spending total (EUR mil.)	11,915	12,330	5,432
Nature Motivated Spending			
All trips	4,356	4,492	2,209
Proportion	51%	52%	56%
Recreation only trips	3,103	3,341	1,643
Proportion	36%	37%	42%

Water filtration – monetary account

- Based on replacement cost of drinking water treatment in comparison of surface and groundwater sources
- The difference in production costs of drinking water from groundwater and surface ranged between 0.078 and 0.093 EUR · m⁻³

Measurement units	Institutional sector										TOTAL USE	
	agriculture	forestry	fisheries	mining and quarrying	manufacturing	construction	electricity, gas supply	water collection, treatment, supply	other industries	households		
groundwater purification							23,293				23,293	
Total							23,293				23,293	

Measurement units	Ecosystem types								TOTAL SUPPLY	
	Cropland	Woodland and forest	Urban	Heathland and shrub	Grassland	Rivers and lakes	Wetlands	Sparsely vegetated a.		
Groundwater purification	K EUR/year	9,533	6,746	2,626	2,274	1,806	274	31	2	23,293
Total		9,533	6,746	2,626	2,274	1,806	274	31	2	23,293

Value transfer

- We tested the applicability of value transfer approach to ecosystem accounting
- Meta-analysis of forest valuation studies was performed for Europe based on studies in the period 2000 - 2017
- We found that the total value of forest is approximately 2842 US\$ ha⁻¹ year⁻¹, with regulation and maintenance ES being the most valuable services
- These results were applied to monetary supply and use table

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