



land cover
cci



StateO

5-7 May 2026 | ESA-ESRIN | Frascati (Rome), Italy



Annual global maps of spatially explicit sub-300m pixel plant functional type fractions informed by 10-30 m EO datasets

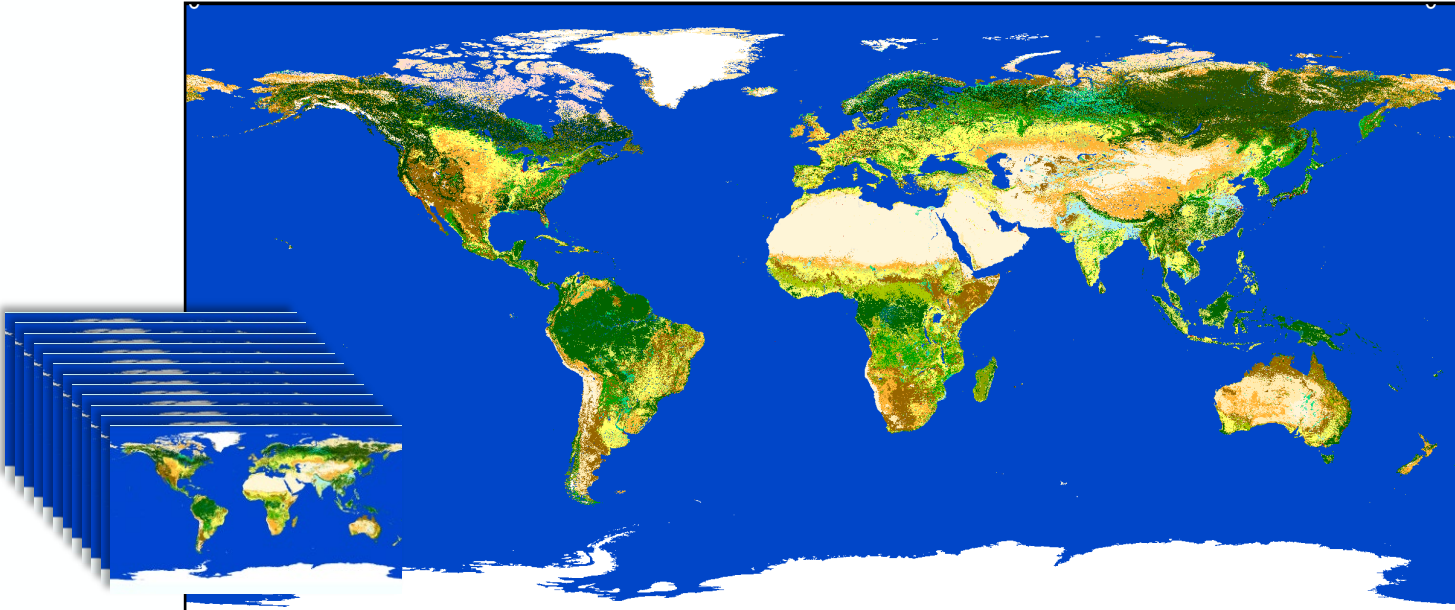
A companion dataset of the ESA CCI/EU C3S global annual LC map series 1992-2022

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¹UCLouvain-Geomatics (Belgium), Belgium; ²Met Office, UK; ³LSCE, France; ⁴Brockmann Consult GmbH, Germany; ⁵European Space Agency ECSAT, UK



ESA CCI MR LC/C3S global 300 m categorical LC maps 1992-2022



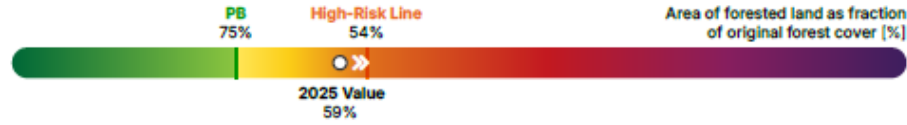
- 37 land cover classes (incl. 15 regional classes) at 300 m resolution
- Typology based on the UN Land Cover Classification System
- Specifications:
 - Long-term global coverage and consistency by design
 - Annual time step: 1992–2015 (ESA CCI) 2016–2022 (EU C3S)
 - Quantified mean(std) Overall Accuracies 2016 – 2022: 71% +/- 0.28

Value	Label	Color
0	No Data	
10	Cropland, rainfed	
11	Herbaceous cover	
12	Tree or shrub cover	
20	Cropland, irrigated or post-flooding	
30	Mosaic cropland (>50%) / natural vegetation (tree, shrub, herbaceous cover) (<50%)	
40	Mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%) / cropland (<50%)	
50	Tree cover, broadleaved, evergreen, closed to open (>15%)	
60	Tree cover, broadleaved, deciduous, closed to open (>15%)	
61	Tree cover, broadleaved, deciduous, closed (>40%)	
62	Tree cover, broadleaved, deciduous, open (15-40%)	
70	Tree cover, needleleaved, evergreen, closed to open (>15%)	
71	Tree cover, needleleaved, evergreen, closed (>40%)	
72	Tree cover, needleleaved, evergreen, open (15-40%)	
80	Tree cover, needleleaved, deciduous, closed to open (>15%)	
81	Tree cover, needleleaved, deciduous, closed (>40%)	
82	Tree cover, needleleaved, deciduous, open (15-40%)	
90	Tree cover, mixed leaf type (broadleaved and needleleaved)	
100	Mosaic tree and shrub (>50%) / herbaceous cover (<50%)	
110	Mosaic herbaceous cover (>50%) / tree and shrub (<50%)	
120	Shrubland	
121	Evergreen shrubland	
122	Deciduous shrubland	
130	Grassland	
140	Lichens and mosses	
150	Sparse vegetation (tree, shrub, herbaceous cover) (<15%)	
151	Sparse tree (<15%)	
152	Sparse shrub (<15%)	
153	Sparse herbaceous cover (<15%)	
160	Tree cover, flooded, fresh or brakish water	
170	Tree cover, flooded, saline water	
180	Shrub or herbaceous cover, flooded, fresh/saline/brakish water	
190	Urban areas	
200	Bare areas	
201	Consolidated bare areas	
202	Unconsolidated bare areas	
210	Water bodies	
220	Permanent snow and ice	

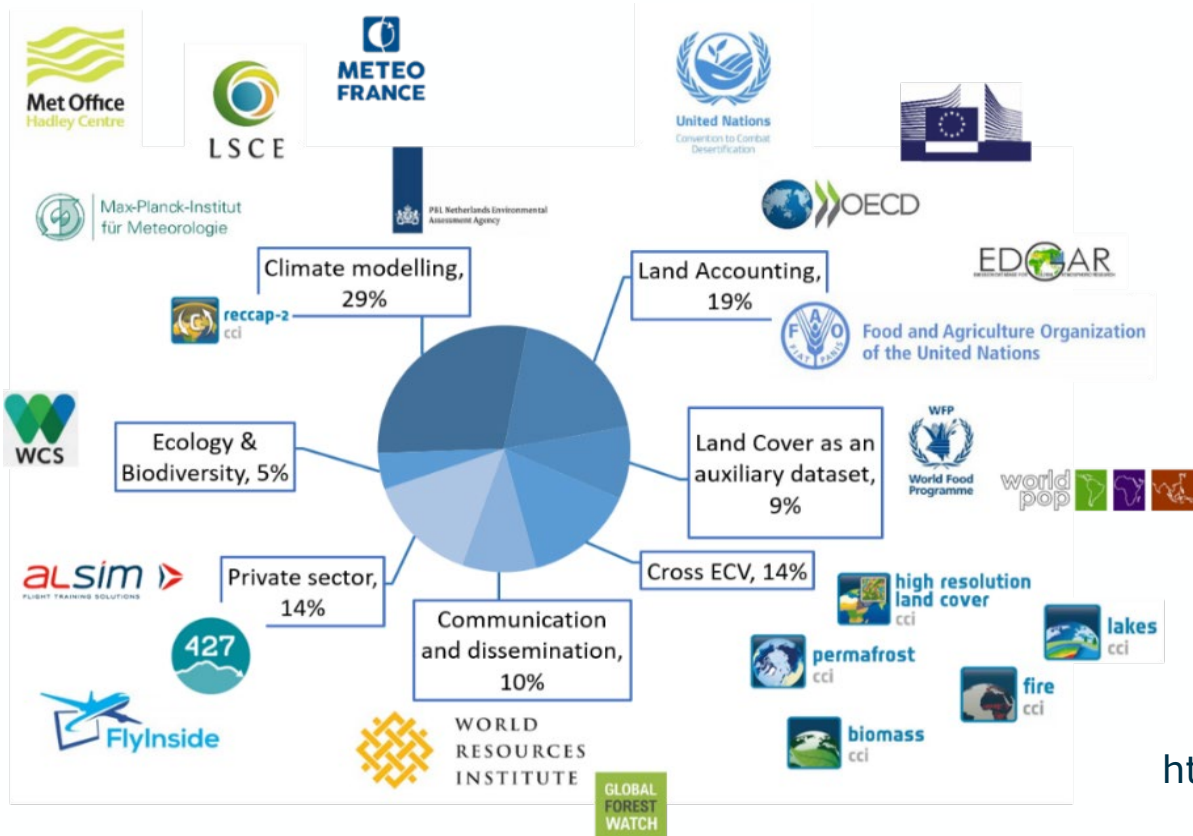
ESA CCI land cover maps support official environmental reporting



- Including operational statistical workflows: support greenhouse-gas inventories, natural-capital accounting, agricultural monitoring, and LULC change assessments



4.3 Land System Change



OECD Green Growth Studies
Green Growth Indicators 2017

OECD (2017), Green Growth Indicators 2017, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/9789264268586-en>

LC and LC conversions

Tesnière et al. (2024)
<https://doi.org/10.1787/441a7a6c-en>

Planetary Health Check 2025

A Scientific Assessment of the State of the Planet



https://publications.pik-potsdam.de/rest/items/item_32589_5/component/file_33151/content

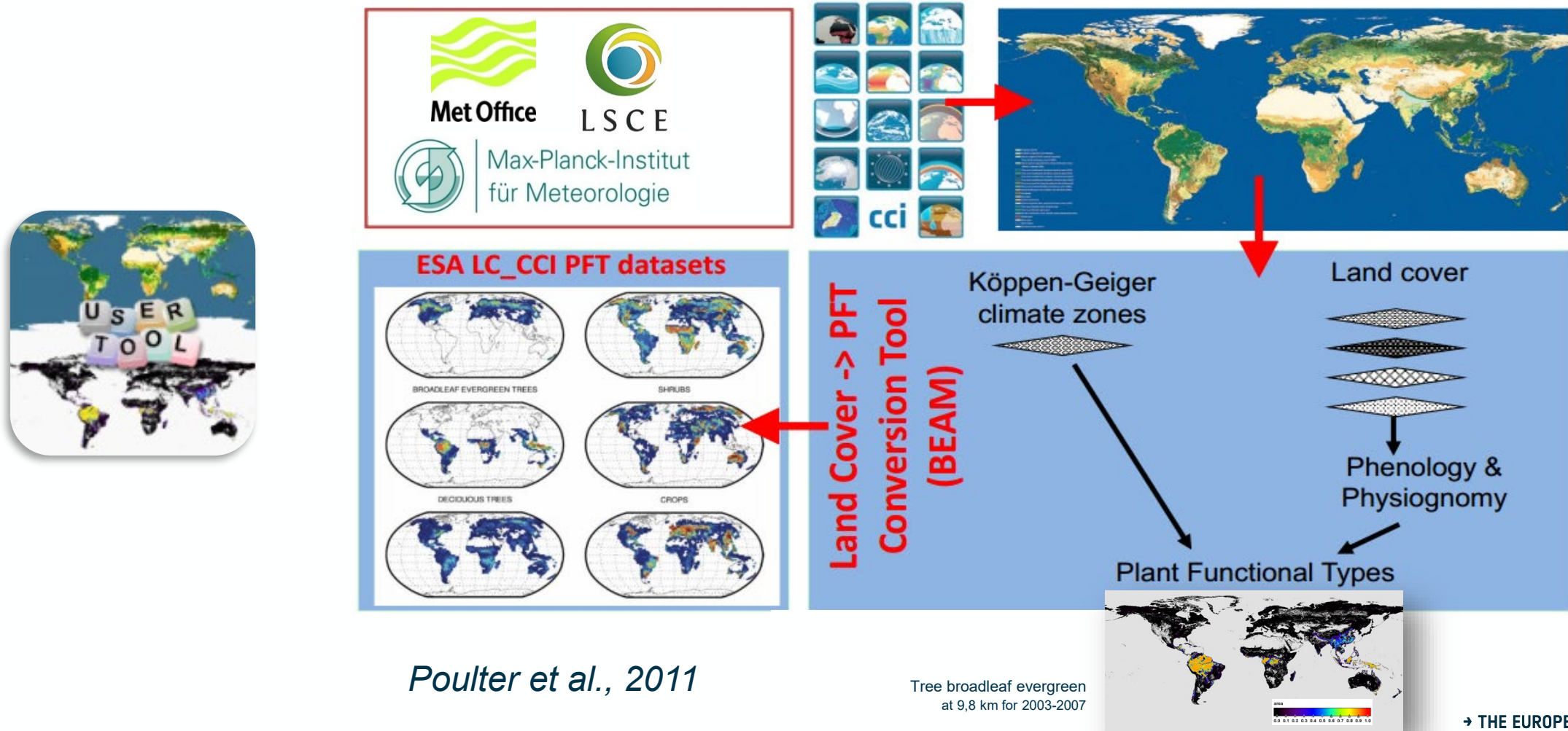
OECD Environment Working Papers No. 254

Monitoring land cover change to understand biodiversity pressures: Indicator methodology and key findings

Vladimir Tesnière, Mikaël J. A. Maes, Ivan Hašičić

Categorical land cover maps must be converted into continuous vegetation fractions for climate models

- Most land surface models (LSMs) parameterize vegetation processes for a reduced set of globally representative plant functional types (PFTs)



Poulter et al., 2011

Tree broadleaf evergreen at 9,8 km for 2003-2007

A cross-walking table (CWT) assigns fixed PFT fractions to each of the 37 LC classes



Land cover classes →

Plant functional types

LCCS Class	UNLCCS Land Cover Class Description	Tree				Shrub				Grass		Non-vegetated		
		BrEv	BrDc	NeEv	NeDe	BrEv	BrDc	NeEv	NeDe	Nat. Grass	Man. Grass	Bare soil	Water	Snow/Ice
10	Cropland, rainfed										100			
11	Herbaceous cover										100			
12	Tree or shrub cover					50					50			
20	Cropland, irrigated or post-flooding										100			
30	Mosaic cropland (> 50 % nat. veg. (tree, shrub, herb.) (< 50 %)	5	5			5	5	5		15	60			
40	Mosaic nat. veg. (tree, shrub, herb.) (> 50 %)/cropland (< 50 %)	5	5			7.5	10	7.5		25	40			
50	Tree cover, broadleaf, evergreen, closed to open (> 15 %)	90				5	5							
60	Tree cover, broadleaf, deciduous, closed to open (> 15 %)		70				15			15				
61	Tree cover, broadleaf, deciduous, closed (> 40 %)		70				15			15				
62	Tree cover, broadleaf, deciduous, open (15-40 %)		30				25			35		10		
70	Tree cover, needleleaf, evergreen, closed to open (> 15 %)			70		5	5	5		15				
71	Tree cover, needleleaf, evergreen, closed (> 40 %)			70		5	5	5		15				
72	Tree cover, needleleaf, evergreen, open (15-40 %)			30		5	5	5		30		30		
80	Tree cover, needleleaf, deciduous, closed to open (> 15 %)				70	5	5	5		15				
81	Tree cover, needleleaf, deciduous, closed (> 40 %)				70	5	5	5		15				
82	Tree cover, needleleaf, deciduous, open (15-40 %)				30	5	5	5		30		30		
90	Tree cover, mixed leaf type (broadleaf and needleleaf)		30	20	10	5	5	5		15		10		
100	Mosaic tree and shrub (> 50 %)/herbaceous cover (< 50 %)	10	20	5	5	5	10	5		40				
110	Mosaic herbaceous cover (> 50 %)/tree and shrub (< 50 %)	5	10	5		5	10	5		60				
120	Shrubland					20	20	20		20		20		
121	Shrubland evergreen					30		30		20		20		
122	Shrubland deciduous						60			20		20		
130	Grassland									60		40		
140	Lichens and mosses									60		40		
150	Sparse vegetation (tree, shrub, herbaceous cover) (< 15 %)	1	3	1		1	3	1		5		85		
152	Sparse shrub (< 15 %)					2	6	2		5		85		
153	Sparse herbaceous cover (< 15 %)									15		85		
160	Tree cover, flooded, fresh or brackish water	30	30							20			20	
170	Tree cover, flooded, saline water	60				20							20	
180	Shrub/herbaceous cover, flooded, fresh/saline/brackish water		5	10			10	5		40			30	
190	Urban areas		2.5	2.5						15		75	5	
200	Bare areas											100		
201	Consolidated bare areas											100		
202	Unconsolidated bare areas											100		
210	Water bodies												100	
220	Permanent snow and ice													100

Poulter et al. (2015). doi:10.5194/gmd-8-2315-2015.

- Life form
 - ✓ Tree, shrub, grass
- Leaf type
 - ✓ Broadleaved, needle-leaved
- Phenology:
 - ✓ Deciduous, evergreen

- No geographic variation, no local calibration, no within-class heterogeneity
- Hartley et al. (2017): CWT uncertainty exceeds LC map uncertainty in driving inter-model differences
- A new PFT product is designed to close this gap

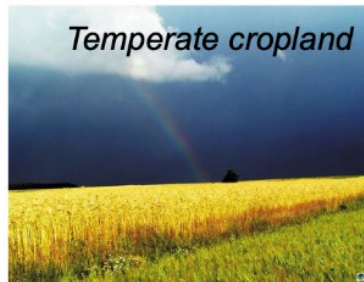
Continuous PFT fractions aims at better defining mosaic LC classes and vegetation variability within classes

- Defining mosaic LC categories

- 30: > 50% cropland / < 50% natural tree, shrub, herbaceous cover
- 40: > 50% natural tree, shrub, herbaceous cover / < 50% cropland
- 100: > 50% tree and shrub cover / < 50% herbaceous cover
- 110: > 50% herbaceous cover / < 50% tree and shrub cover

Ex. Croplands/Grasslands

- Add **varying PFT fractions per pixel** and thus within one LC category



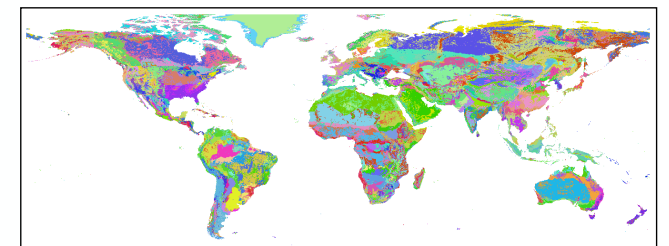
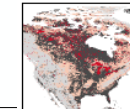
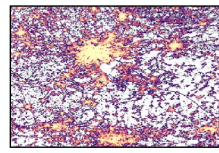
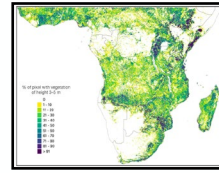
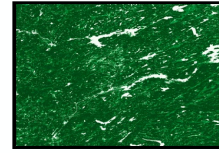
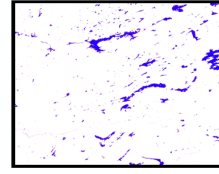
CCI CLASS	TREES			SHRUBS			GRASSE		Bare Soil	Water	Snow/Ice	Urban				
	TrBr Ev	TrBr De	TrNe Ev	TrNe De	ShBr Ev	ShBr De	ShNe Ev	ShNe De					Nat Gr	Cro ps		
10									10	90						
	cropland, rainfed								0	100						
11									10	90						
	cropland, rainfed, herbaceous cover								0	100						
12											30					
	cropland, rainfed, tree or shrub cover									50		50				
20									10	90						
	cropland, irrigated or post-flooding								0	100						
30																
	mosaic cropland (>50%) / natural vegetation (tree, shrub, herbaceous cover) (<50%)								5	5		5	5	15	60	
40																
	mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%) / cropland (<50%)								7.5	7.5		10	15	10	30	20
	mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%) / cropland (<50%)								5	5		7.5	10	7.5	25	40

<https://orchidas.lsce.ipsl.fr/dev/lccci/tools.php>

Refining the 300 m pixel fractional composition with higher resolution data



Input dataset	Description	Characteristics	Use
Surface water frequency occurrence (Pekel et al. 2016)	Frequency of water occurrence over period Mar 1984–Dec 2019	Landsat-based 30 m resolution 80°N–60°S	30 m pixels with water frequency $\geq 90\%$ considered to be permanent inland water. Mean resampling to 300 m to get permanent inland water fraction
Tree canopy cover (Hansen et al. 2013)	Maximum tree canopy cover % in growing season	Landsat-based 30 m resolution 80°N–60°S c. 2010	Median resampling of non-water pixels to get tree fraction at 300 m
Tree canopy height (Potapov et al. 2021)	Canopy height (0–60 m)	GEDI lidar-based forest height measurements (Apr–Oct 2019) combined with Landsat 30 m 52°N–52°S	Mean resampling of binned height classes to get shrub (3–5 m) and tree (6+ m) at 300 m for shrubland class pixels
Global Human Settlement Layer (Pesaresi et al. 2013)	Built/non-built indicator	Landsat-based 30 m c. 2014 (most recent yr)	Mean resampling of built/non-built at 30 m to get built fraction in urban pixels at 300 m
Köppen–Geiger climate zones (Beck et al. 2018)	30 climate zones	Based on high-resolution climate data 1 km 1980–2016 climate	Combined zones used to differentiate woody vegetation types (broadleaved vs needleleaved, deciduous vs evergreen) for all shrub cover and for tree cover in a limited set of pixels
IMAGE administrative regions (PBL 2014)	28 administrative regions	Regional definitions used in IMAGE integrated assessment model	
Landforms (Sayre et al. 2014)	Mountain, hills, plains indicator	Based on 250 m digital elevation model	



A generic class-specific rule chain ensures consistency across all 37 LC classes









Class description	Inland water%	tree%	Tree type	Grass%	Grass type	Shrub%	Bare soil%	Built%	Snow/ice%							
Rainfed cropland (10 - 12)	Surface water product	Tree canopy cover product	Majority window	100% - water% - tree%	LC legend (MAN)	0%	0%	0%	0%							
Irrigated or post-flooding cropland (20)					Tree canopy cover product + Method 1					LC legend	LC legend (NAT)					
Mosaic cropland nat veg (30 - 40)												Majority window				
Mosaic woody herbaceous (100% - 110)																
Grassland (130)		Tree canopy cover product + Method 2	Majority window		Majority window											
Tree cover BE >15% (50)										Tree canopy cover product	Majority window	Majority window				
Tree cover BD (60 - 62)		Tree canopy cover product	Majority window		Majority window											
Tree cover NE (70 - 72)										Tree canopy cover product	Majority window	Majority window				
Tree cover ND (80 - 82)		Tree canopy cover product	Majority window		Majority window											
Tree cover mixed leaf type										Tree canopy cover product	Majority window	Majority window				
Tree cover - flooded (160 - 170)		Tree canopy cover product	Majority window		Majority window											
Lichens & mosses (140)	0%			N/A		100% - water%	LC legend (NAT)	0%	0%	0%						
Sparse veg (150 - 153)	Surface water product	Tree canopy cover product + Method 2	Majority window	tree% + grass% 4-14%	Majority window	0%	0%	0%	0%							
Shrubland (120 - 122)										Tree canopy cover product	Majority window	100% - water% - tree% - shrub%	Majority window	0%	0%	0%
Shrub or herbaceous - flooded (180)		Tree canopy cover product		Majority window	100% - water% - tree% - built%	Majority window	0%	0%	GHSL/GUF > 50%							
Urban areas (190)																
Bare areas (200 - 202)		Tree canopy cover product		Majority window	100% - water% - tree% - built%	Majority window	0%	0%	0%	GHSL/GUF > 50%						
Inland water bodies (210)	0%		0%								N/A	NAT	0%	0%	0%	0%
Ocean (210)	100%	0%	N/A	0%	N/A	0%	0%	0%	0%							
Permanent snow & ice (220)	0%	0%	N/A	0%	N/A	0%	0%	0%	100%							

- **The PFT dataset consistency is ensured by design:**
 - **The CCI MRLC map series 1992–2020 is the primary reference for all PFT fraction derivations**
 - **30 m auxiliary datasets refine the fractional composition of PFTs at the 300 m pixel level**
 - **Where auxiliary data conflicts with the LC class definition, the LC definition prevails**
 - **Conflicts are flagged and quantified to ensure full traceability**
- **For pixels with no land cover change from 1992 to 2020, fractions are time-invariant and anchored to the 2010 baseline vegetation fractions**
- **For pixels where land cover change is detected, PFT fractions are updated to reflect the new class and remain time-invariant for the duration of that class label**

The CCI PFT dataset: 29 years of 14 PFT fraction layers per year, 1992–2020, at 300 m globally



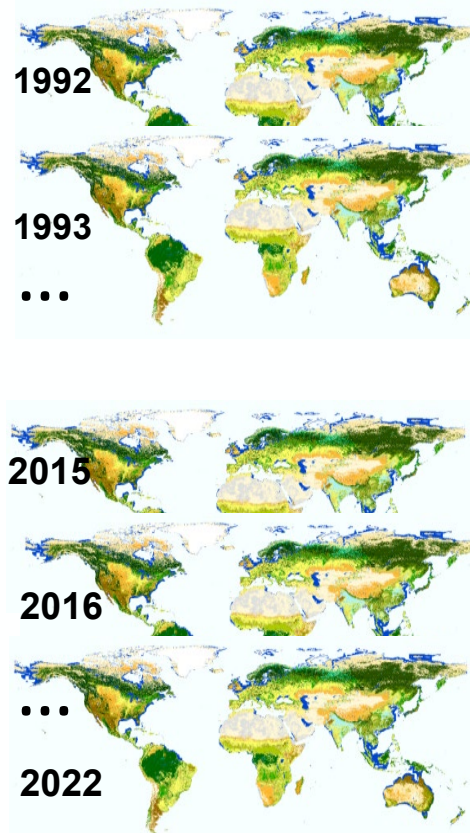
37 categorical LCCS-defined LC classes

-  Cropland, rainfed
-  Cropland irrigated / post-flooding
-  Mosaic cropland / vegetation
-  Mosaic vegetation / cropland
-  Tree broadleaved evergreen
-  Tree broadleaved deciduous
-  Tree needleleaved evergreen
-  Tree needleleaved deciduous
-  Tree mixed leaf type
-  Mosaic tree, shrub / HC
-  Mosaic HC / tree, shrub
-  Shrubland
-  Grassland
-  Lichens and mosses
-  Sparse vegetation
-  Tree flooded, fresh water
-  Tree flooded, saline water
-  Shrub or herbaceous flooded
-  Urban areas
-  Bare areas
-  Water bodies
-  Permanent snow and ice
-  No data

29 years

x

1 annual map



31 years x 14 PFT maps

4 TREE PFTs

broadleaved deciduous/evergreen,
needleleaved deciduous/evergreen

4 SHRUB PFTs

broadleaved deciduous/evergreen,
needleleaved deciduous/evergreen

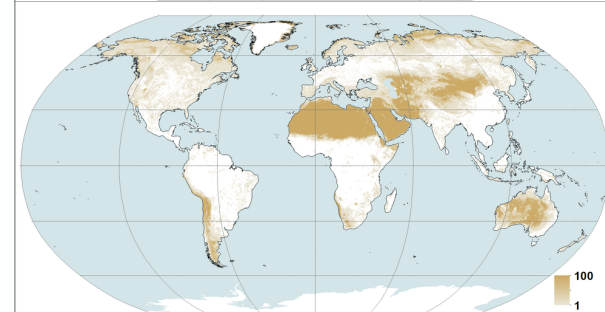
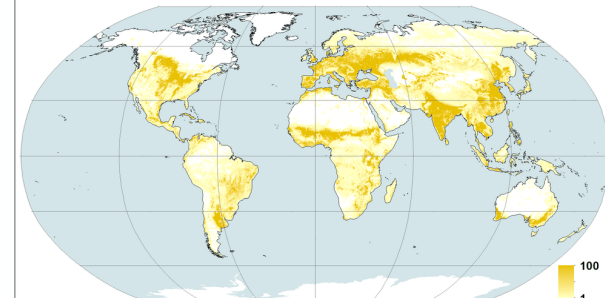
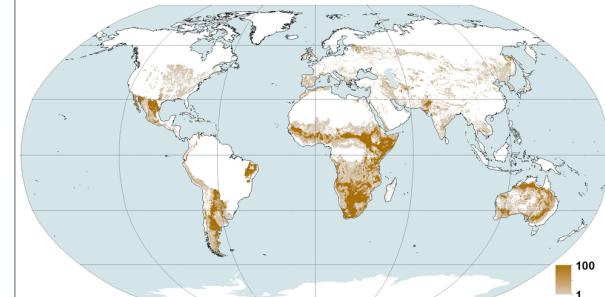
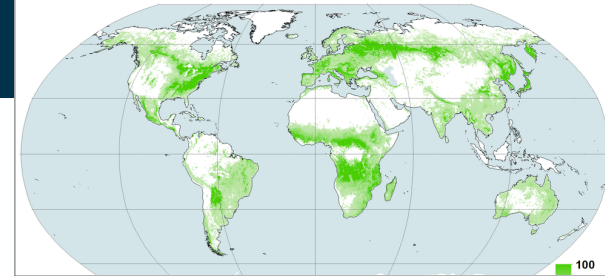
2 GRASS PFTs

natural, managed
(herbaceous crops)

4 ABIOTIC PFTs

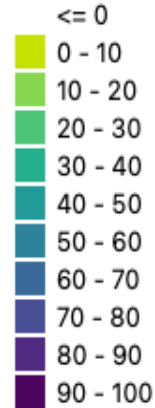
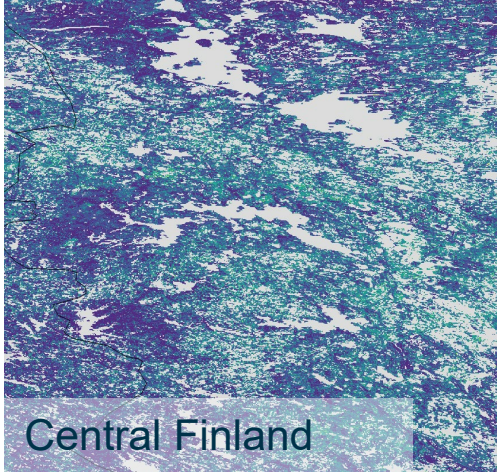
inland water,
permanent snow & ice,
bare soil, built

Cover
fractions
(0–100%)

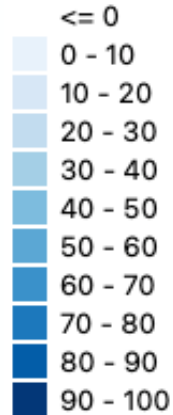
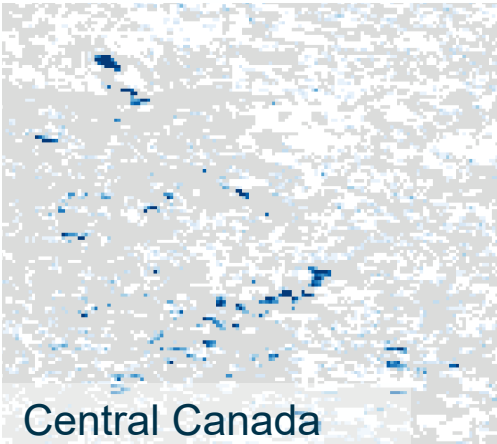


Sub-300m pixel variability in PFT composition

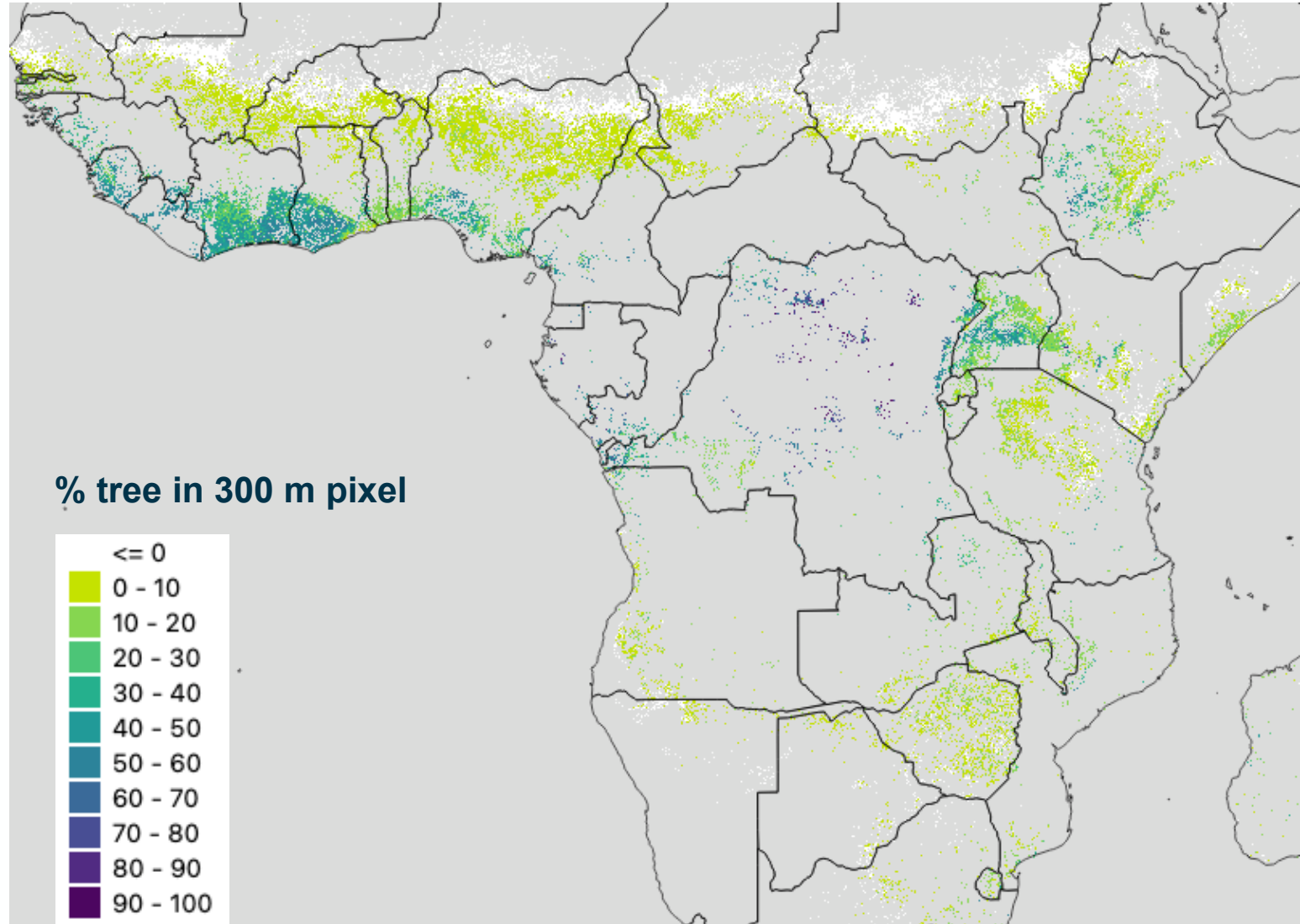
Needleleaved evergreen tree cover continuous fraction



Water body continuous fraction



Share of tree cover in rainfed cropland



Categorical LC classes

Land cover legend
view global (level 1)

- Tree cover, broadleaved, evergreen, closed to open (>15%)

Land cover legend
view global (level 1)

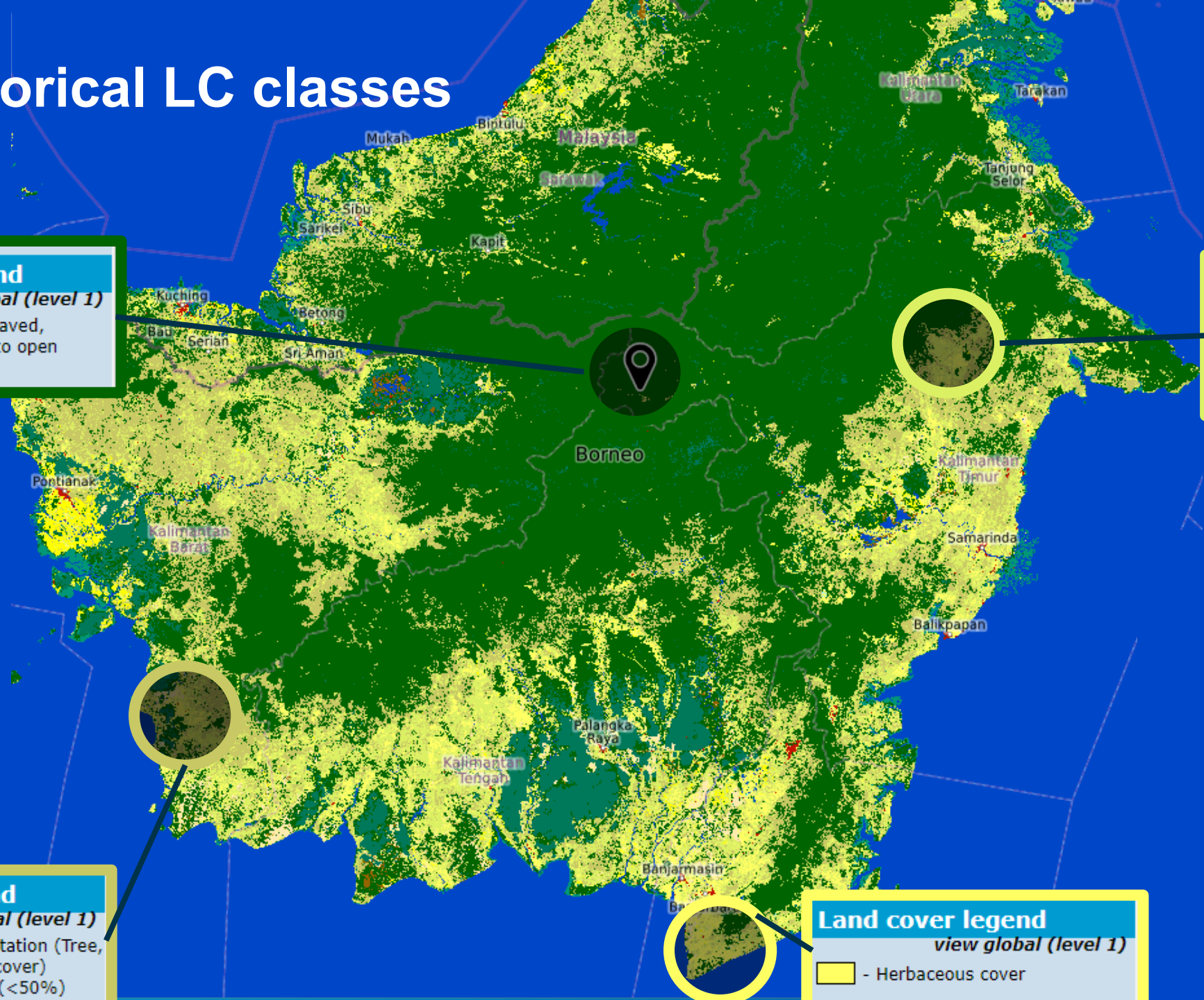
- Mosaic cropland (>50%) / natural vegetation (Tree, shrub, herbaceous cover) (<50%)

Land cover legend
view global (level 1)

- Mosaic natural vegetation (Tree, shrub, herbaceous cover) (>50%) / cropland (<50%)

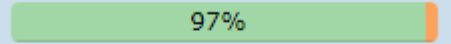
Land cover legend
view global (level 1)

- Herbaceous cover



... are further informed by sub-pixel PFT fractions

PFT distribution



97% Broadleaved evergreen trees
3% Natural grasses

Land cover legend

view global (level 1)

Tree cover, broadleaved, evergreen, closed to open (>15%)

PFT distribution



79% Managed grasses
21% Broadleaved evergreen trees

Land cover legend

view global (level 1)

Mosaic cropland (>50%) / natural vegetation (Tree, shrub, herbaceous cover) (<50%)

PFT distribution



51% Natural grasses
49% Managed grasses

Land cover legend

view global (level 1)

Mosaic natural vegetation (Tree, shrub, herbaceous cover) (>50%) / cropland (<50%)

PFT distribution



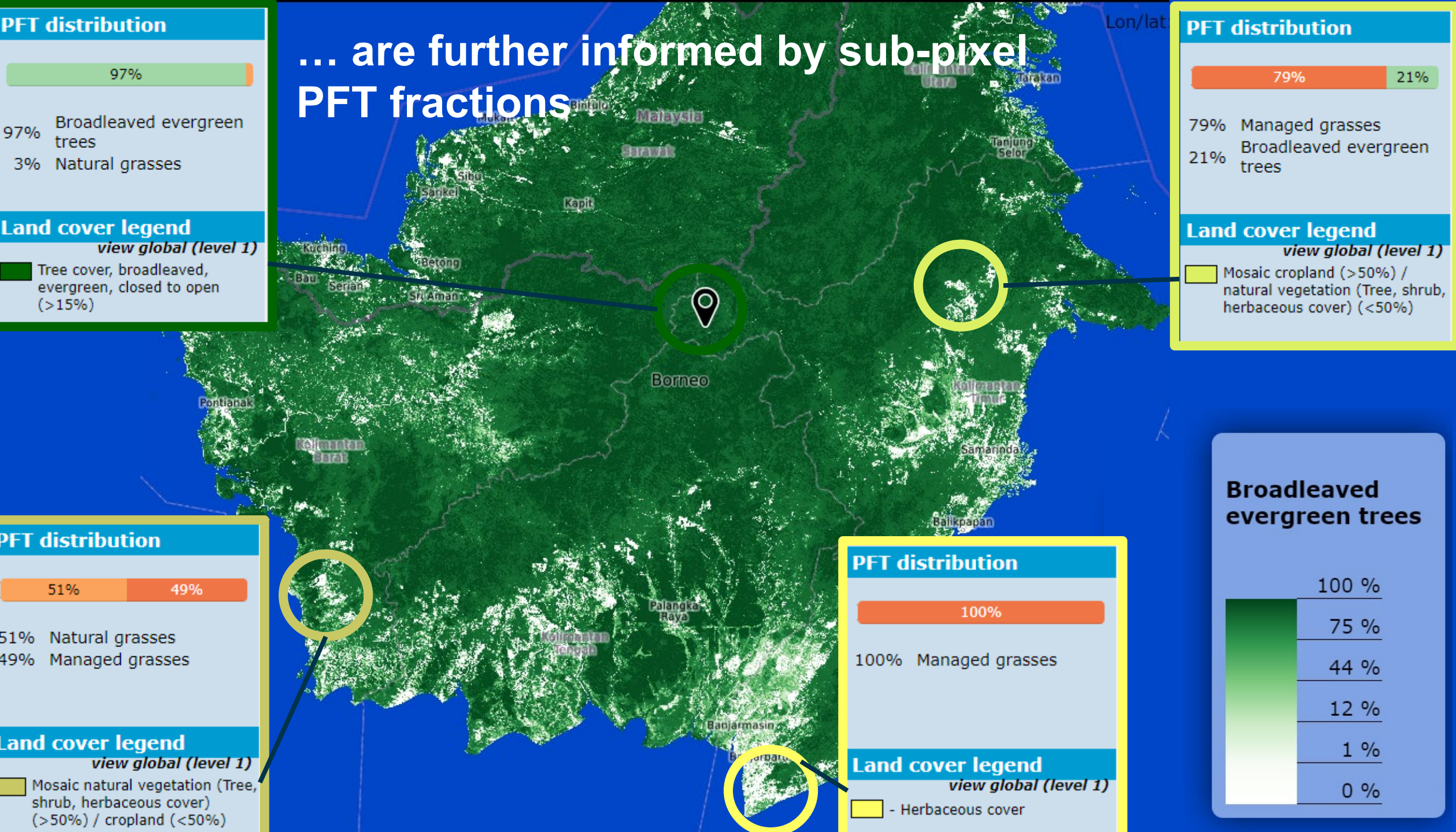
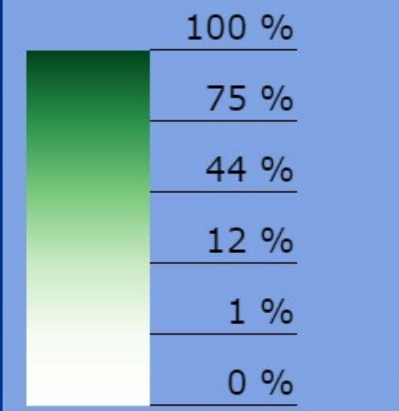
100% Managed grasses

Land cover legend

view global (level 1)

- Herbaceous cover

Broadleaved evergreen trees



PFT distribution

97% Broadleaved evergreen trees
3% Natural grasses

Land cover legend

view global (level 1)

- Tree cover, broadleaved, evergreen, closed to open (>15%)

PFT distribution

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Land cover legend

view global (level 1)

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PFT distribution

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Land cover legend

view global (level 1)

- Mosaic natural vegetation (Tree, shrub, herbaceous cover) (>50%) / cropland (<50%)

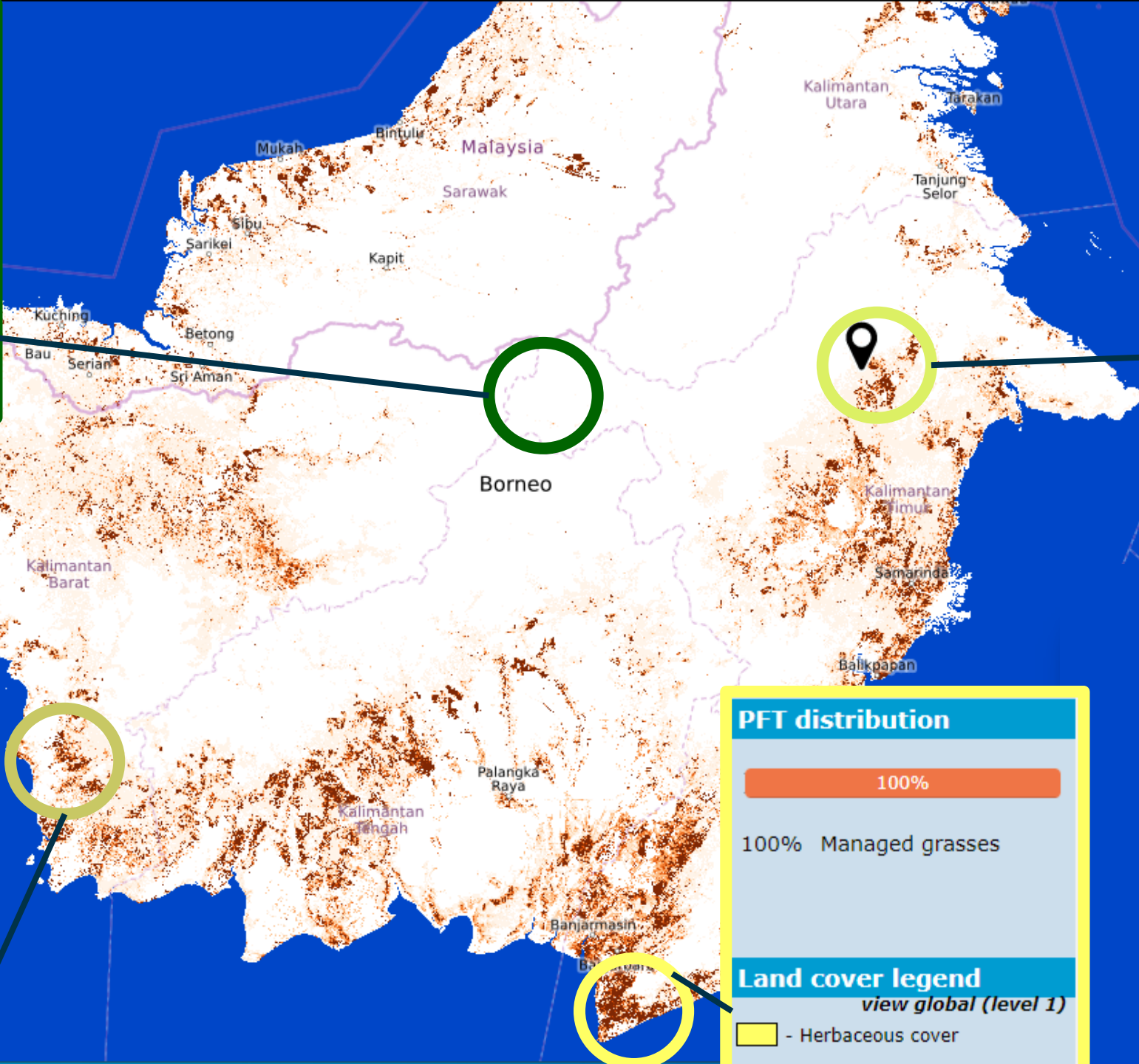
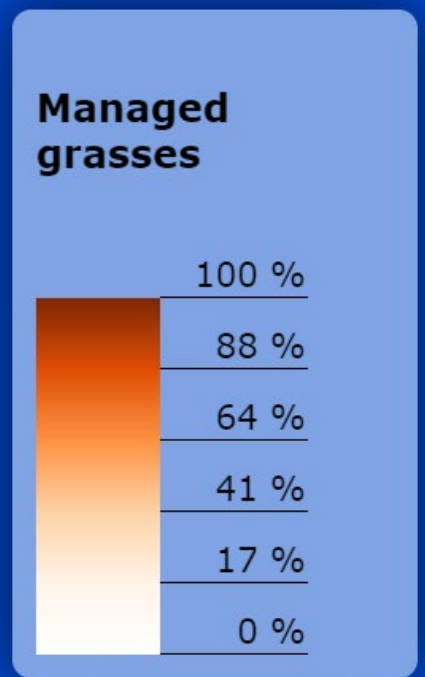
PFT distribution

100% Managed grasses

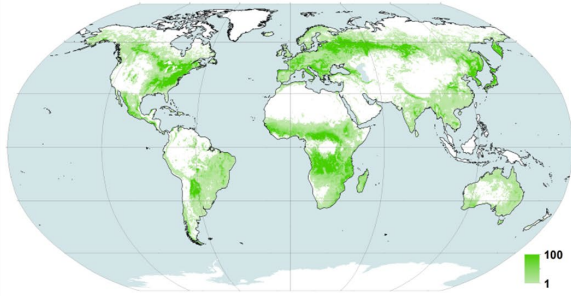
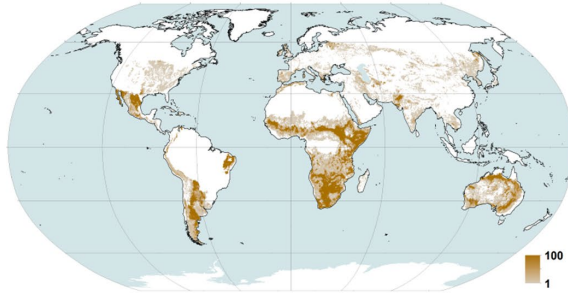
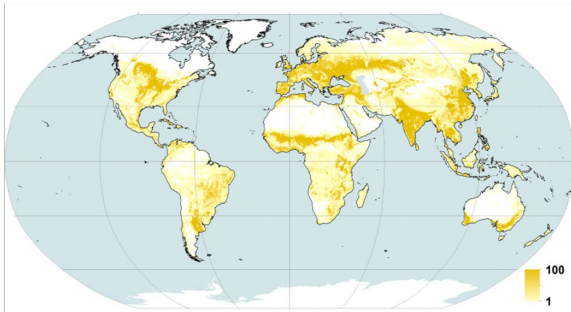
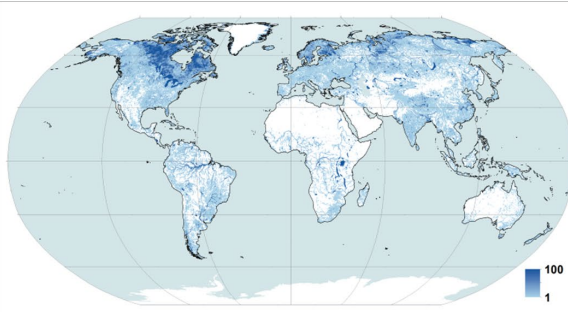
Land cover legend

view global (level 1)

- Herbaceous cover



29 years x 14 PFT maps

**4 TREE PFTs**broadleaved deciduous/evergreen,
needleleaved deciduous/evergreen**4 SHRUB PFTs**broadleaved deciduous/evergreen,
needleleaved deciduous/evergreen**2 GRASS PFTs**natural, managed
(herbaceous crops)**4 ABIOTIC PFTs**inland water, bare soil,
permanent snow & ice, built

- 14 layers, each describing the percentage cover (0–100%) of a plant functional type at a spatial resolution of 300 m

- 1992–2020

- Download from the CCI Open Data Portal:

<https://climate.esa.int/en/odp/#/project/land-cover>

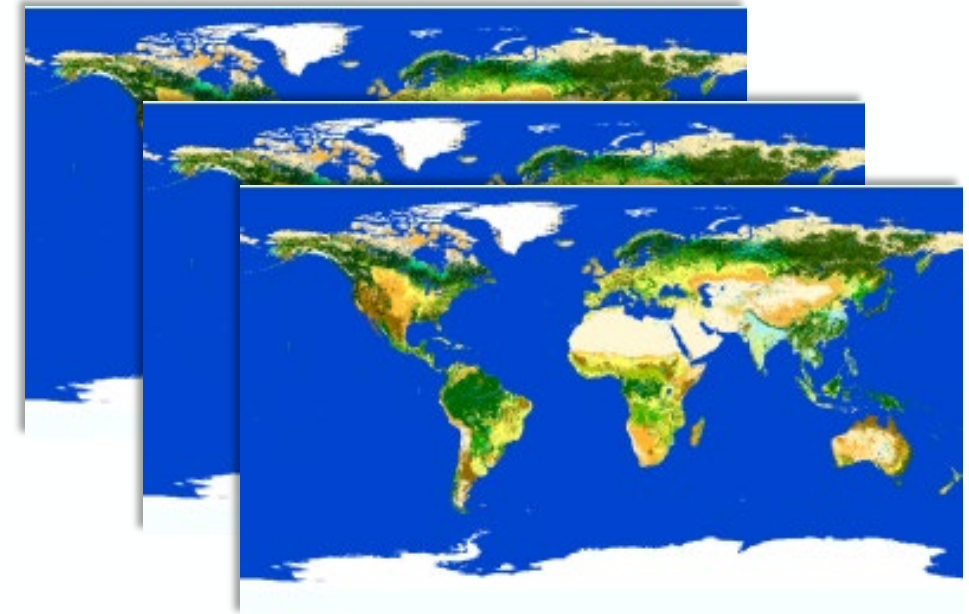
- Visualization interface:

<http://maps.elie.ucl.ac.be/CCI/viewer/index.php>



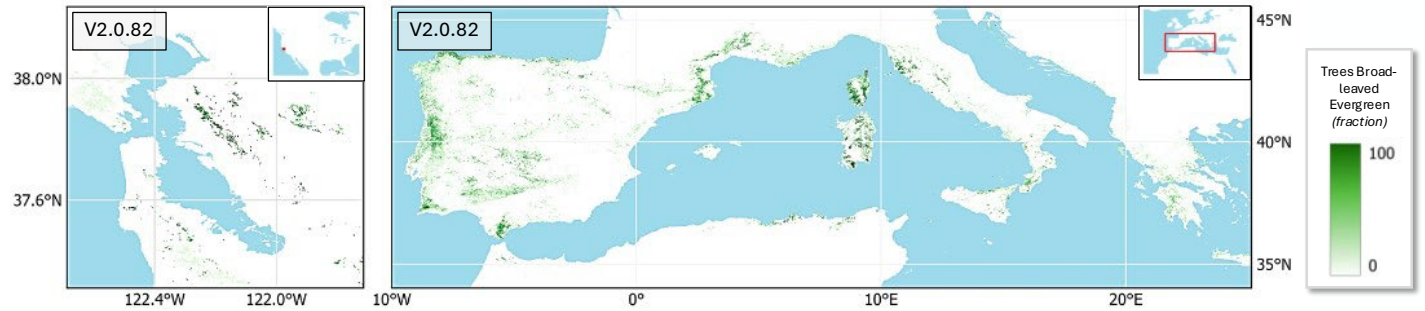
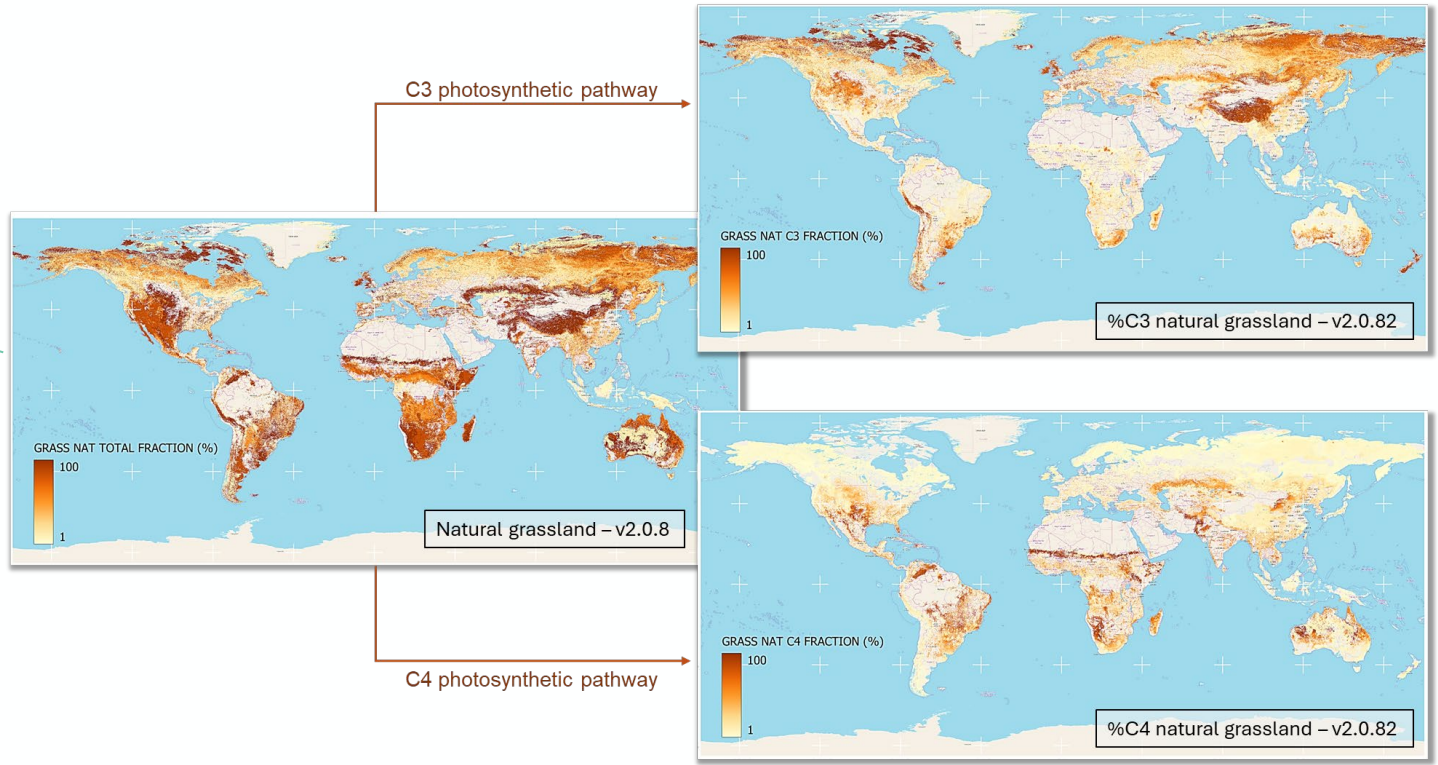
Kandice L. Harper, Céline Lamarche, Andrew Hartley, Philippe Peylin, Catherine Ottlé, Vladislav Bastrikov, Rodrigo San Martín, Sylvia I. Bohnenstengel, Grit Kirches, Martin Boettcher, Roman Shevchuk, Carsten Brockmann, and Pierre Defourny. Earth Syst. Sci. Data, 15, 1465 – 1499, <https://doi.org/10.5194/essd-15-1465-2023>, 2023.

- The CCI MRLC categorical land cover maps remain the primary reference for all PFT fraction derivations
- Extending the PFT time series therefore depends on extending the LC map series first
- Land cover maps for 2023, 2024 and 2025 will be released internally to ECMWF in June 2025
- PFT fraction maps will follow once the new LC maps complete the standard review process. Expected September 2026



Planned updates to the CCI PFT dataset

- Extend the PFT series up to 2025
- Explicit separation of C3 and C4 grass functional types
- Better representation of broadleaf evergreen trees in the Mediterranean region
- Strengthened shrub cover fraction relative to grassland





land cover
cci



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Thank you for your attention

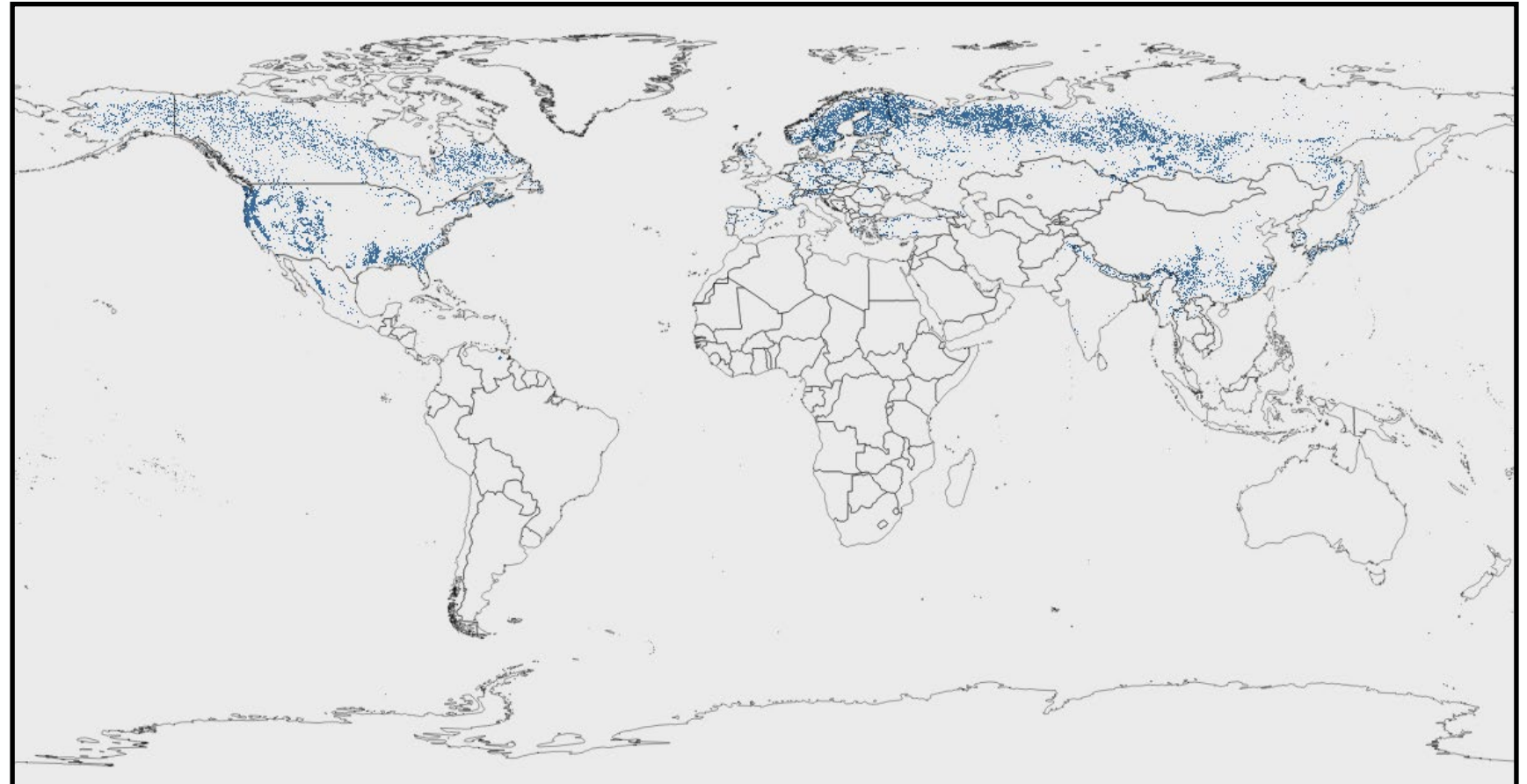
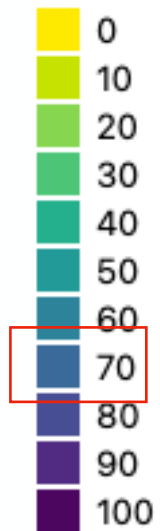
celine.lamarche@uclouvain.be



A global CWT does not allow a geographic variation in PFT fractions for a class

A fraction of 70 % of needleleaved evergreen tree cover is assigned to each 300 m pixel of the CCI MRLC maps with class 70

% needleleaved evergreen trees



CWT procedure uncertainty contribution > LC map uncertainty to the inter-model uncertainty

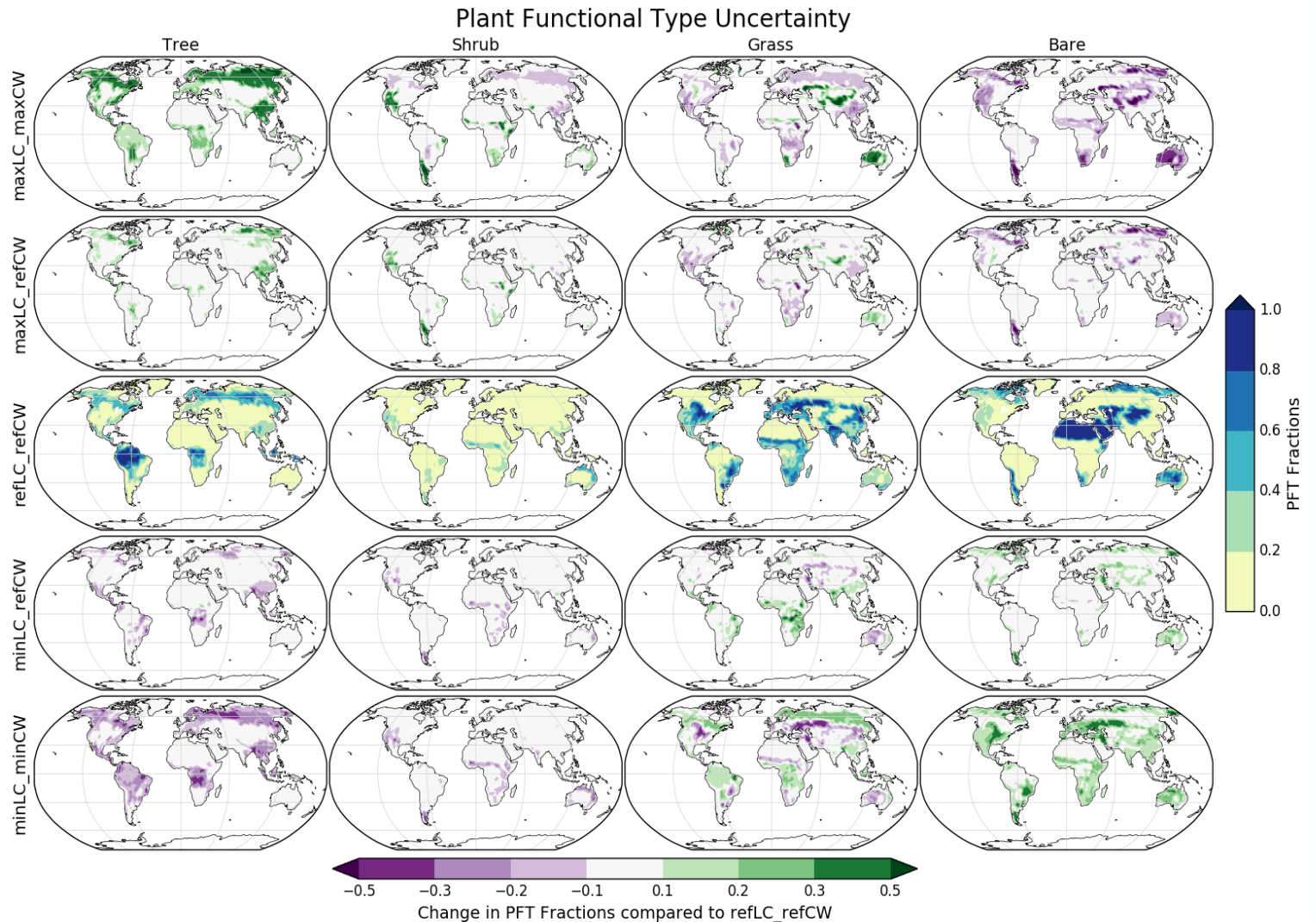
Uncertainty due to cross-walking table

Uncertainty due to LC classification

Reference 2010 CCI LC map & CWT

Uncertainty due to LC classification

Uncertainty due to cross-walking table



Hartley, A. J., MacBean, N., Georgievski, G., & Bontemps, S. (2017). Uncertainty in plant functional type distributions and its impact on land surface models. *Remote Sensing of Environment*, 203, 71–89. <https://doi.org/10.1016/J.RSE.2017.07.037>

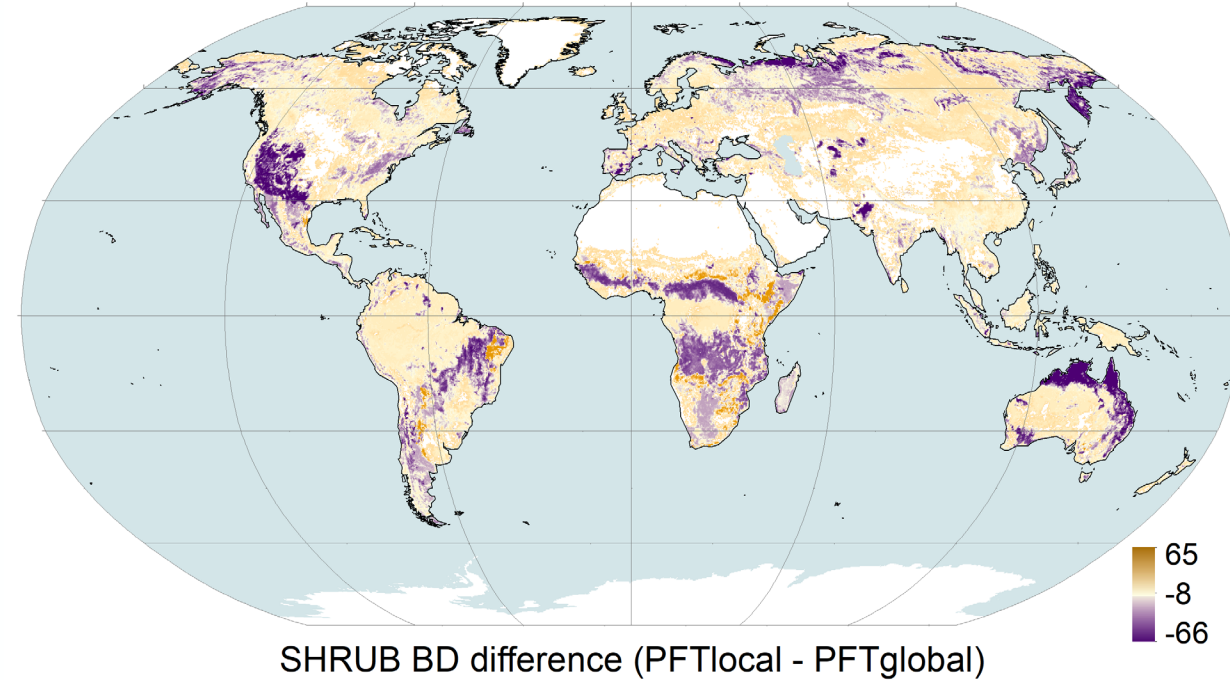
Largest changes in the natural grass and shrubs PFTs

Plant functional type	PFT _{local} product area (1000s km ²)	PFT _{global} CWT-derived area (1000s km ²)	Difference PFT _{local} - PFT _{global} (1000s km ²)	% diff.rel. to the PFT _{global} area
Natural grasses	44304	32034	12270	38
Managed grasses	21436	18681	2754	15
Trees – all types combined	31338	29952	1386	5
Permanent snow & ice	14694	14694	0	0
Inland water	2779	2870	-91	-3
Built	477	647*	-170	-26
Bare soil	27005	29602	-2597	-9
Shrubs – all types combined	4667	18218	-13551	-74

* Assumes 100% built for urban class pixels based on ORCHIDEE model. If instead of using the default for the JULES model (75%), the CWT-based area is 485 km² and the percentage difference between the built areas for the PFT product and the global CWT is -2%.

The new PFT map restricts shrubs to shrubland classes

CCI MRLC category	Difference in area (1000s km ²) as PFT product minus CWT-derived
Tree cover classes	-6186
Shrubland classes	-3909
Mosaic cropland–natural veg	-1763
Mosaic woody–herbaceous	-898
Sparse veg	-430
Flooded shrubland	-178
Cropland	-133



A reduced bare soil fraction in the new PFT_{local}

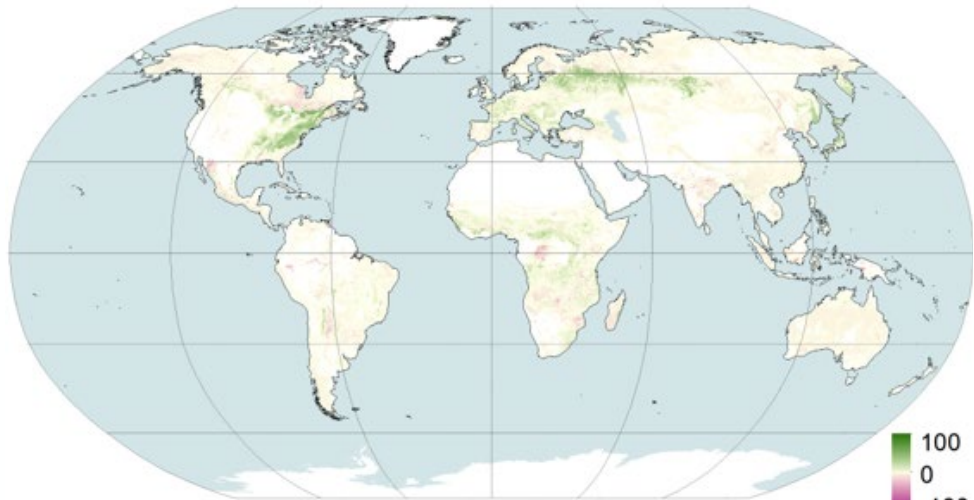
Plant functional type	PFT _{local} product	PFT _{global}	Difference	% diff.rel. to the PFT _{global} area
	area (1000s km ²)	area (1000s km ²)	PFT _{local} - PFT _{global} (1000s km ²)	
Natural grasses	Reduction in bare soil PFT relative to CWT:			38
Managed grasses	Shrubland classes: -2,662,000 km ²			15
Trees – all types combined	Sparse vegetation classes: +79,000 km ²			5
	Bare area classes: -13,000 km ²			
Permanent snow & ice				0
Inland water	2779	2870	-91	-3
Built	477	647*	-170	-26
Bare soil	27005	29602	-2597	-9
Shrubs – all types combined	4667	18218	-13551	-74

* Assumes 100% built for urban class pixels based on ORCHIDEE model. If instead using the default for the JULES model (75%), the CWT-based area is 485 km² and the percentage difference between the built areas for the PFT product and the global CWT is 20%

Differences in tree cover fractions

Plant Functional Type	PFT _{local} - PFT _{global} (1000s km ²)	% difference rel. to the PFT _{global}
Trees – all types	1386	5

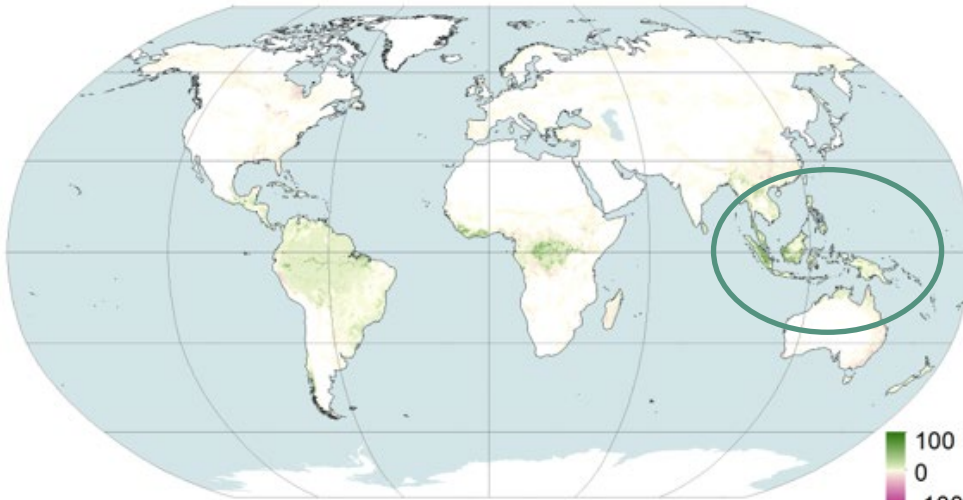
+104
(1000s km²)
+2%



TREE BD difference (new - old)



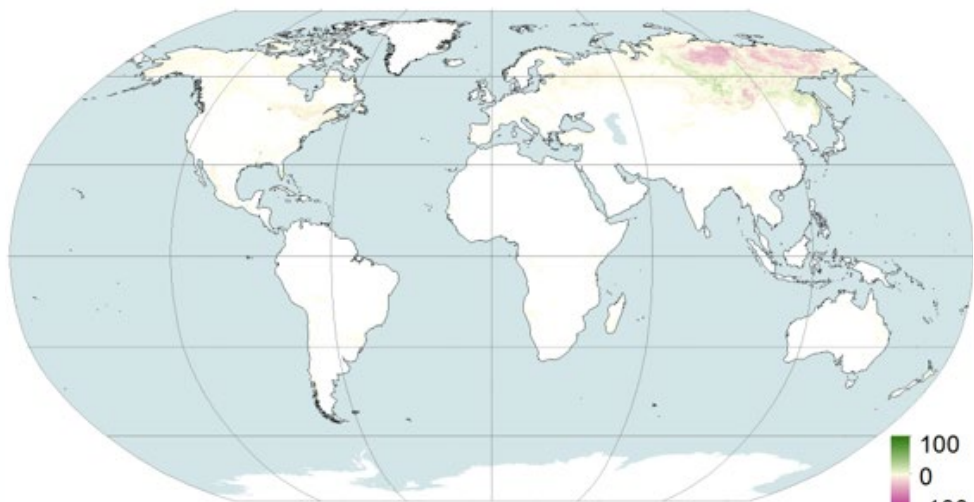
+1277
(1000s km²)
10%



TREE BE difference (new - old)



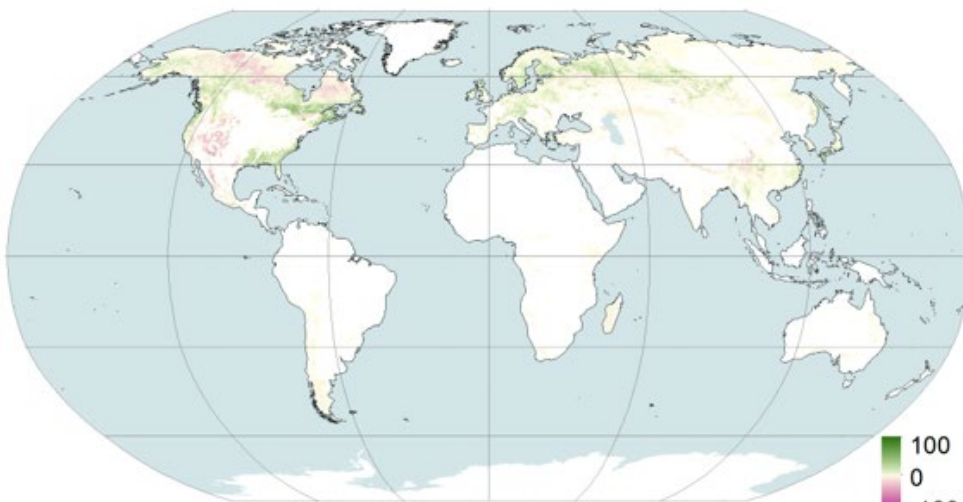
-601
(1000s km²)
-20%



TREE ND difference (new - old)



+606
(1000s km²)
9%

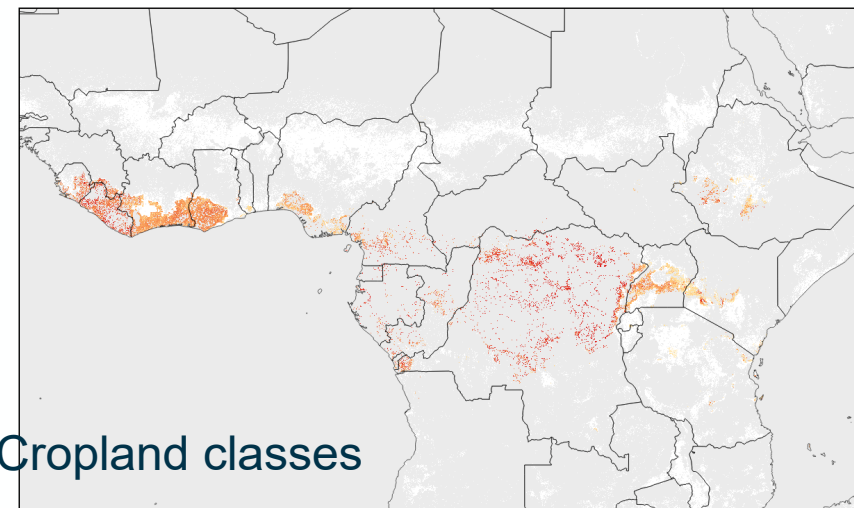
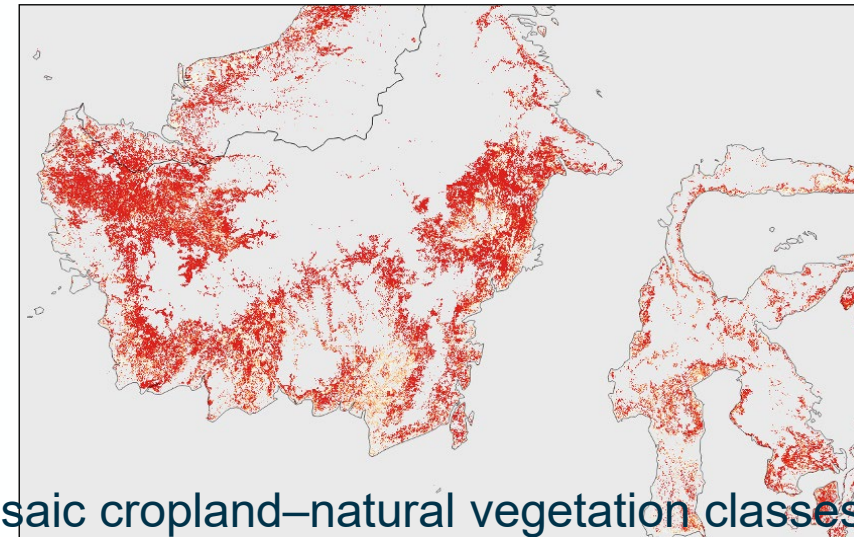


TREE NE difference (new - old)

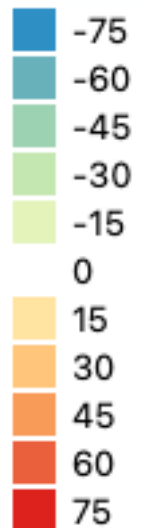


Broadleaved evergreen tree PFT are more represented mostly in mosaic cropland

CCI MRLC category	Difference: $PFT_{local} - PFT_{global}$ (1000s km ²)
Mosaic cropland–natural veg	521
Cropland	350
Shrubland	220
Grassland	159
Mixed trees	64
Flooded trees	53
Flooded shrubland	15
Water body	9
BE tree cover	7
Urban	1
Mosaic woody–herbaceous	-40
Sparse vegetation	-83



Difference in % cover:
PFT product minus CWT

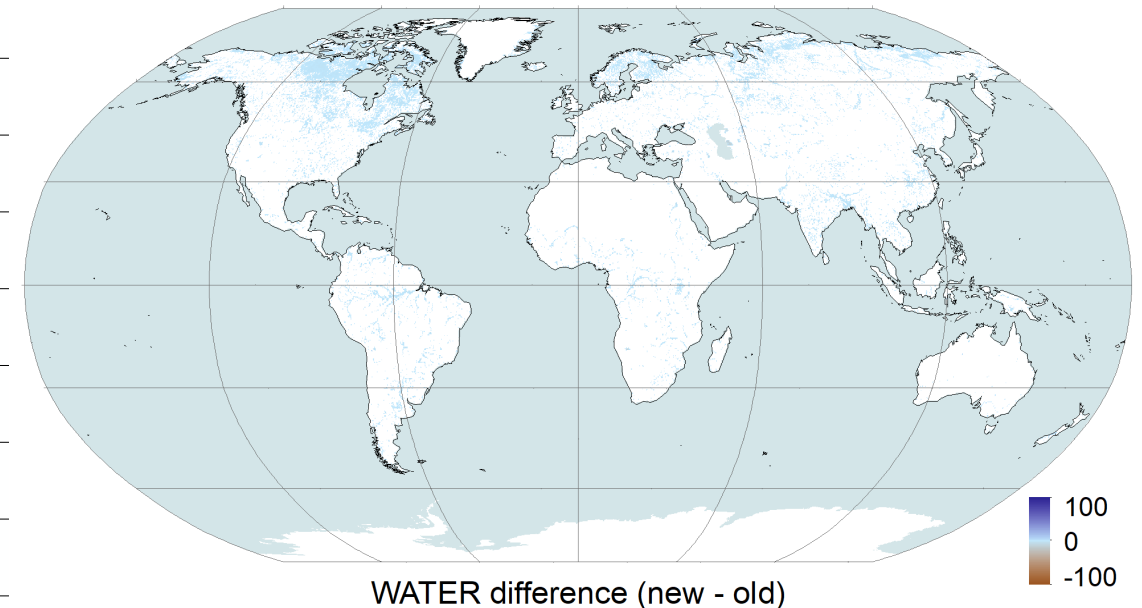


New PFT maps allow inland water in all classes except permanent snow & ice class

LC category	PFT _{local} area (1000s km ²)	PFT _{global} area (1000s km ²)
Water body	2637.1	2870.2
NE trees	39.9	0
Sparse veg	20.6	0
Lichens & mosses	14.2	0
Bare	12.5	0
Flooded shrubland	11.7	0
Flooded trees	7.4	0
Grassland	5.8	0
Shrubland	5.2	0
Cropland	5.2	0
BE trees	4.3	0

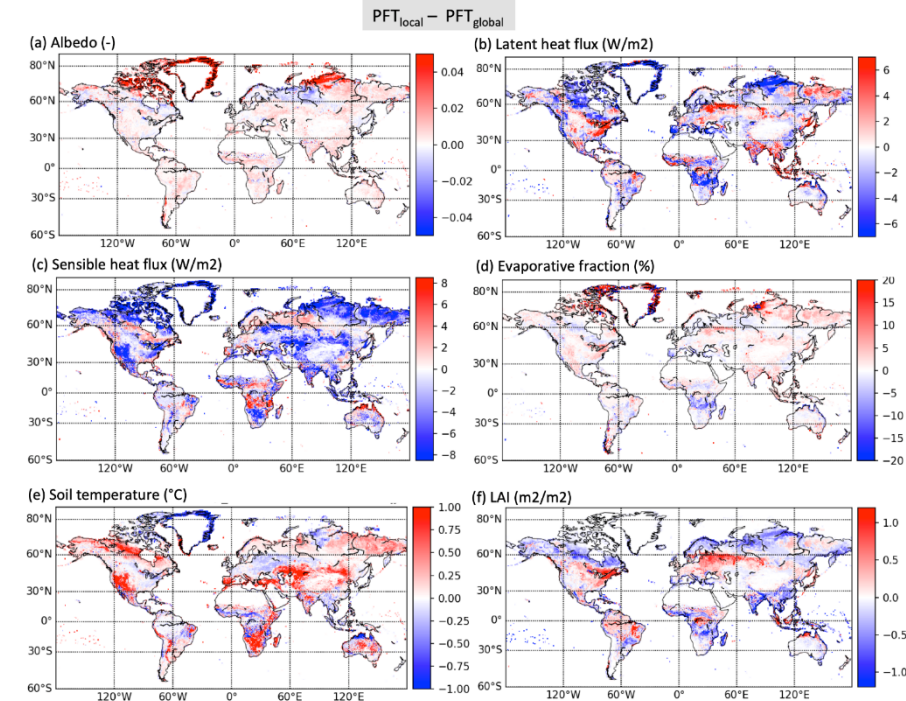
PFT product allows up to 14% vegetation cover in the water body class

Largely in the boreal region



Modelling results

- ORCHIDEE simulation differences between the new PFT and the old PFT distributions
 - Changing the PFT distribution in the ORCHIDEE model (PFT_{local} vs PFT_{global}) induces significant impacts on the simulated water, energy and carbon fluxes



- Evaluation of the impact of using the new PFT distributions as a benchmark for JULES-TRIFFID dynamic vegetation
 - Using the new PFT product as a benchmark improves the evaluation (bias) of every major surface type in the JULES-TRIFFID (shrub cover)

