

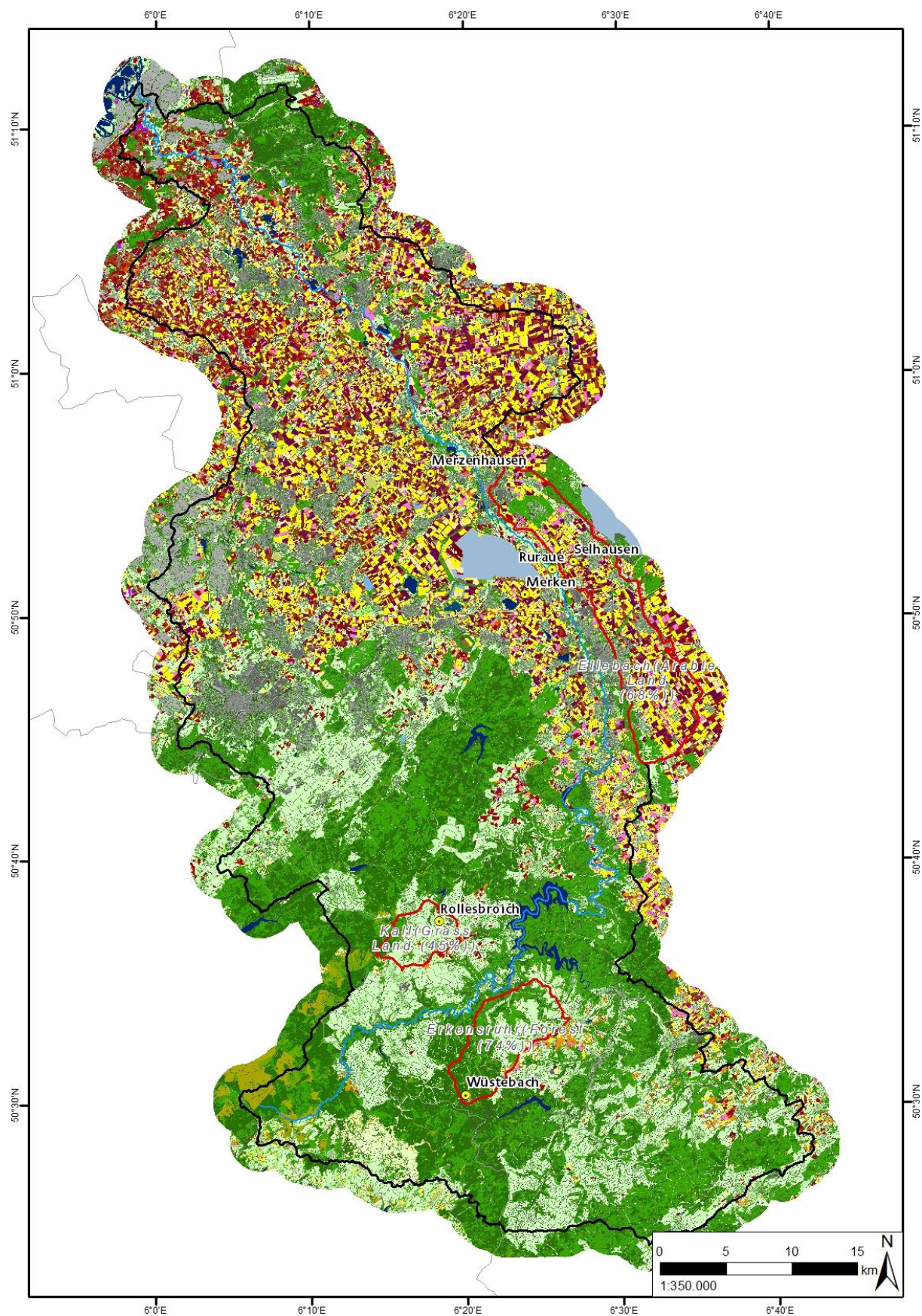
Documentation - Preliminary land use classification of 2016 for the Rur Catchment

	<u>Note:</u> By downloading this dataset you accept adequate reference in case this data will be discussed or used in any publication or presentation. In this case please use the following citation: Waldhoff, Guido (2016): Preliminary land use classification of 2016 for the Rur catchment. TR32DB. DOI:10.5880/TR32DB.26.
Content	
files:	data lu16pre_.tif lu16pre_.tfw documentation this file Read_Me.txt Legend_LU16.txt
data size:	6 MB (115 MB unzipped)
extend:	Rur Catchment
provider:	Z1 (G. Waldhoff)
language:	english
date of publication:	12/2016
date of purchase:	/
Description	
description:	This data set contains the preliminary land use classification of 2016 for the study area of the CRC/Transregio 32: "Patterns in Soil-Vegetation-Atmosphere Systems: monitoring, modelling and data assimilation", which corresponds to the catchment of the river Rur. The study area is mainly situated in the western part of North Rhine-Westphalia (Germany) and parts of the Netherlands and Belgium, covering an area of approximately 2365 square kilometers. The land use classification is derived from supervised, multi temporal remote sensing data analysis using Sentinel-2 (S2) and RapidEye (RE). For the land use analysis datasets of the following acquisition dates were employed: April 20 (S2), May 8 (RE), June 9 (RE), August 16 (RE) and September 8 (RE). Full coverage of the study area was not available for all acquisition dates and thus the crop classification is partly affected in its

	depth of information. For the assessment of the crop classification accuracy refer to the error matrix on the last page. To enhance the information content of the land use data product, the Multi-Data Approach (MDA) was applied to combine the remote sensing derived land use information with additional data sets like the 'Authorative Topographic-Cartographic Information System' (ATKIS Basic-DLM, AAA schema) and 'Physical Block' information. Furthermore, OpenStreetMap (OSM) data were integrated to update the information on the road network, settlement areas in the Netherlands where CorineLandCover data were outdated, and the course of the river Rur in the Netherlands. The methodology of the MDA is described in more detail in Waldhoff & Bareth (2008), Waldhoff et al. (2012) and Waldhoff (2014). The classification is provided in GeoTIFF and in ASCII format. Spatial resolution: 15 m; Projection: WGS84, UTM Zone 32N. References: Waldhoff, G. & Bareth, G. (2008): GIS- and RS-based land use and land cover analysis: case study Rur-Watershed, Germany. - Proc. SPIE 7146, Geoinformatics 2008 and Joint Conference on GIS and Built Environment: Advanced Spatial Data Models and Analyses, 714626 (November 10, 2008); doi: 10.1117/12.813171. Waldhoff, G., Curdt, C., Hoffmeister, D. & Bareth, G. (2012): Analysis of multitemporal and multisensor remote sensing data for crop rotation mapping. - ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci., I-7, 177-182, doi: 10.5194/isprsannals-I-7-177-2012. Waldhoff, G. (2014): Multidaten-Ansatz zur fernerkundungs- und GIS-basierten Erzeugung multitemporaler, disaggregierter Landnutzungsdaten. Methodenentwicklung und Fruchtfolgenableitung am Beispiel des Rureinzugsgebiets. Dissertation, University of Cologne, Germany, http://kups.ub.uni-koeln.de/id/eprint/5861. Acknowledgements: We thank Geobasis.NRW for the provision of the ATKIS-Basic-DLM. The spatial data for the Netherlands was obtained from geodata.nationaalgeoregister.nl. All OSM data were obtained from Geofabrik GmbH. Furthermore, we thank the Space Administration of the German Aerospace Center (DLR) and Planet Labs Germany GmbH for the provision of RapidEye data via the RapidEye Science Archive (RESA) and ESA for the provision of the Sentinel-2 data.
abbreviations used in data:	/

Example

Coverage of the preliminary land use classification 2016



Error-Matrix of the preliminary land use classification 2016

		Reference Data									
	Class	WR	KT	M	ZR	WW	SG	WG	Total	CE (%)	UA (%)
Classification	WR	99.79	0.00	0.00	0.00	0.00	0.00	0.00	10.45	0.00	100.00
	KT	0.00	79.13	0.00	0.06	0.00	3.40	0.00	6.99	3.58	96.42
	M	0.00	0.00	97.06	0.00	0.00	0.00	0.00	12.86	0.00	100.00
	ZR	0.00	20.87	2.94	99.94	0.00	0.00	0.00	20.43	10.60	89.40
	WW	0.00	0.00	0.00	0.00	86.86	0.00	9.15	24.01	6.31	93.69
	SG	0.00	0.00	0.00	0.00	0.00	96.60	0.00	6.78	0.00	100.00
	WG	0.21	0.00	0.00	0.00	13.14	0.00	90.85	18.49	18.53	81.47
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00		
	OE (%)	0.21	20.87	2.94	0.06	13.14	3.40	9.15		OA(%):	92.64
	PA (%)	99.79	79.13	97.06	99.94	86.86	96.60	90.85		Kappa:	0.91

WR = Rapeseed; KT = Potatoes; M = Maize; ZR = Sugar Beet; WW = Winter Wheat; WG = Winter Barley; SG = Summer Barley; NW = Coniferous Trees; LW = Deciduous Trees

OE = Omission Error; CE = Commission Error; PA = Producer's Accuracy; UA = User's Accuracy; OA = Overall Accuracy

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