

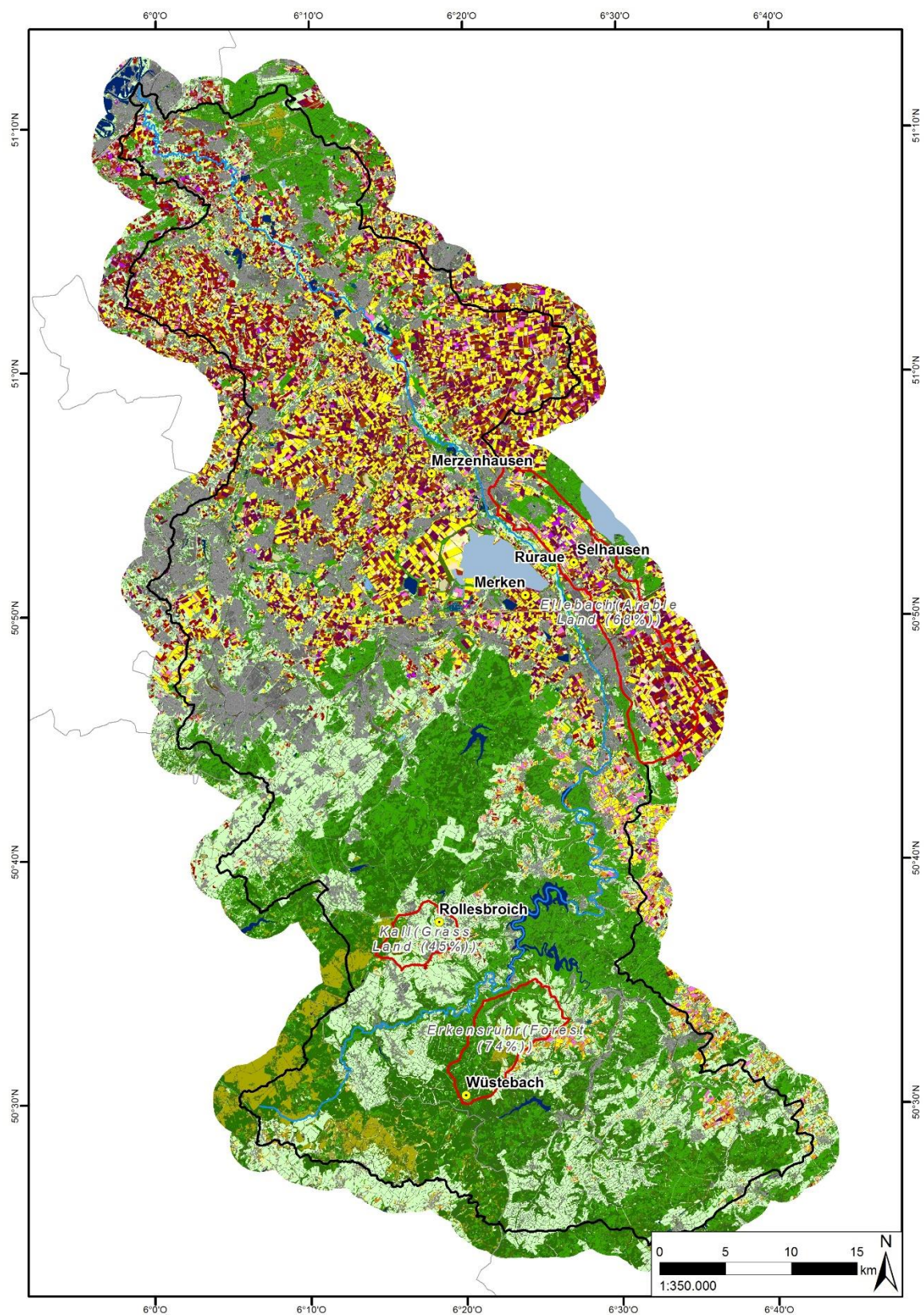
Documentation – Land use classification of 2018 for the Rur catchment

	Note: 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: Lussem, Ulrike & Herbrecht, Marina (2019): Land use classification of 2018 for the Rur catchment. TR32DB. DOI:10.5880/TR32DB.38.
Content	
files:	data documentation this file lu18_.tfw lu18_.tif lu18_.txt lu18_.prj Read_Me.txt Legend_LU18.txt
data size:	6.7 MB (154 MB unzipped)
extend:	Rur Catchment
provider:	Z1 (U. Lussem)
language:	english
date of publication:	05.04.2019
date of purchase:	/
Description	
description:	This data set contains the land use classification of 2018 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 Multispectral Imager data (European Space Agency). For the land use analysis datasets of the following acquisition dates were employed: May 08, May 28, July 02, July 07, and August 06, 2018. 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 Basis-DLM) and 'Physical Block' information. Furthermore, OpenStreetMap (OSM) data were integrated outside of the ATKIS coverage to enhance the information content on the road network, settlement areas and the course of the river Rur in the Netherlands and Belgium. The methodology of the MDA is described in more detail in Waldhoff et al. 2017, Bareth & Waldhoff (2018) 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., Lussem, U., Bareth, G. (2017): Multi-Data Approach for remote sensing-based regional crop rotation mapping: A case study for the Rur catchment, Germany. International Journal of Applied Earth Observation and Geoinformation 61, 55-69, 10.1016/j.jag.2017.04.009. Bareth, G. and Waldhoff, G. (2018): 2.01 - GIS for Mapping Vegetation A2 - Huang, Bo. Comprehensive Geographic Information Systems, Elsevier, Oxford, 1-27, https://doi.org/10.1016/B978-0-12-409548-9.09636-6 Waldhoff, G. (2014): Multidaten-Ansatz zur fernerkundungs- und GISbasierten 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-Basis-DLM. Additional spatial data for the Netherlands was obtained from geodata.nationaalgeoregister.nl. All OSM data were obtained from Geofabrik GmbH. Furthermore, we thank the European Space Agency (Copernicus Program) for the provision of the Sentinel-2 data via the Copernicus Open Access Hub.
abbreviations used in data:	/

Example

Coverage of the land use classification 2018



Error-matrix of the land use classification 2018

		Referenzdaten (Pixel)											
	Klasse	WR	NW	LW	KT	M	ZR	WW	WG	SG	Total	CE (%)	UA (%)
Klassifikation (Pixel)	WR	5282	0	0	0	1	0	0	16	11	5310	0.53	99.47
	NW	0	9171	134	0	0	0	0	0	0	9305	1.44	98.56
	LW	0	496	11484	0	0	0	0	0	0	11980	4.14	95.86
	KT	0	0	0	2553	19	155	2	0	0	2729	6.45	93.55
	M	0	0	0	2	3768	28	70	6	11	3885	3.01	96.99
	ZR	1	0	0	413	577	12283	1	8	0	13283	7.53	92.47
	WW	23	0	0	0	0	1	11714	531	11	12280	4.61	95.39
	WG	8	0	0	0	0	0	184	4585	0	4777	4.02	95.98
	SG	4	0	0	0	0	0	27	0	1741	1772	1.75	98.25
	Total	5318	9667	11618	2968	4365	12467	11998	5146	1774	65321		
OE (%)	0.68	5.13	1.15	13.98	13.68	1.48	2.37	10.90	1.86		OA (%) :	95.81	
PA (%)	99.32	94.87	98.85	86.02	86.32	98.52	97.63	89.10	98.14		Kappa :	0.951	

WR = Rapeseed; KT = Potatoes; M = Maize; ZR = Sugar beet; WW = Winter wheat; WG = Winter barley; SG = Summer barley, NW = Coniferous forest, LW = Deciduous forest

PA = Producer's Accuracy; UA = User's Accuracy; OA = Overall Accuracy