

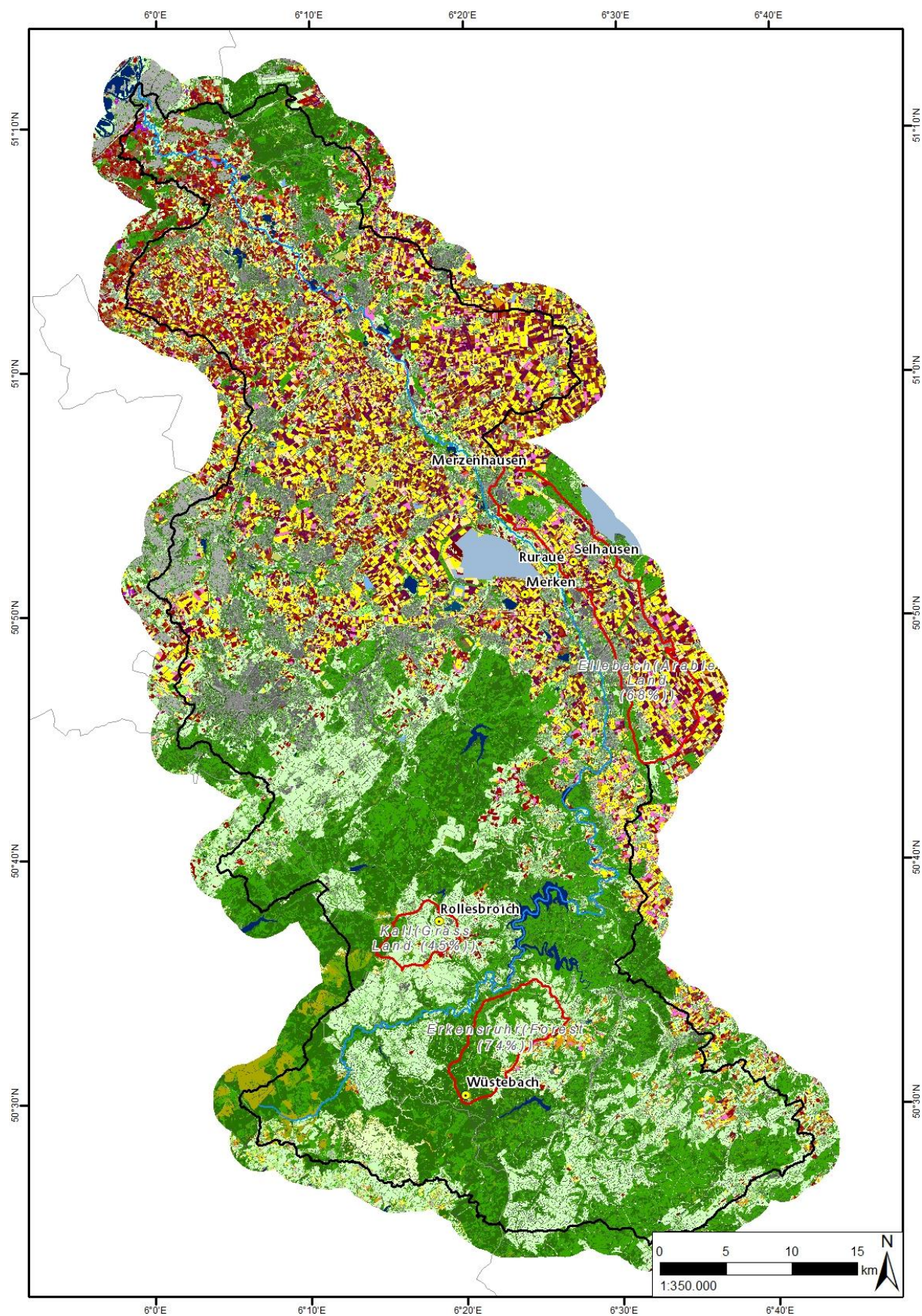
## Documentation - Final land use classification of 2016 for the Rur Catchment

	<p><b><u>Note:</u></b></p> <p><b>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:</b></p> <p><b>Waldhoff, Guido (2018): Final land use classification of 2016 for the Rur catchment. TR32DB. DOI:10.5880/TR32DB.28.</b></p>
<b>Content</b>	
files:	<p>data</p> <p>    lu16_.tif</p> <p>    lu16_.tfw</p> <p>    lu16___.txt</p> <p>documentation</p> <p>    this file</p> <p>    Read_Me.txt</p> <p>    Legend_LU16.txt</p>
data size:	7 MB (117 MB unzipped)
extend:	Rur Catchment
provider:	Z1 (G. Waldhoff)
language:	English
date of publication:	05/2018
date of purchase:	/
<b>Description</b>	
description:	<p>This data set contains the 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.</p> <p>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</p>

	<p>depth of information. For the assessment of the crop classification accuracy refer to the error matrix on the last page.</p> <p>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 'Authoritative 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.</p> <p>The methodology of the MDA is described in more detail in Waldhoff et al. 2017, Bareth &amp; Waldhoff (2018) and Waldhoff (2014).</p> <p>The classification is provided in GeoTIFF and in ASCII format. Spatial resolution: 15 m; Projection: WGS84, UTM Zone 32N.</p> <p>References:</p> <p>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.</p> <p>Bareth, G. and Waldhoff, G. (2018): 2.01 - GIS for Mapping Vegetation A2 - Huang, Bo. Comprehensive Geographic Information Systems, Elsevier, Oxford, 1-27, <a href="https://doi.org/10.1016/B978-0-12-409548-9.09636-6">https://doi.org/10.1016/B978-0-12-409548-9.09636-6</a></p> <p>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, <a href="http://kups.ub.uni-koeln.de/id/eprint/5861">http://kups.ub.uni-koeln.de/id/eprint/5861</a>.</p> <p>Acknowledgements:</p> <p>We thank Geobasis.NRW for the provision of the ATKIS-Basic-DLM. The spatial data for the Netherlands was obtained from <a href="http://geodata.nationaalgeoregister.nl">geodata.nationaalgeoregister.nl</a>. 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.</p>
abbreviations used in data:	/

## Example

### Coverage of the land use classification 2016



## Error-Matrix of the land use classification 2016

	Class	Reference Data									
		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

### Author

G. Waldhoff (Z1)