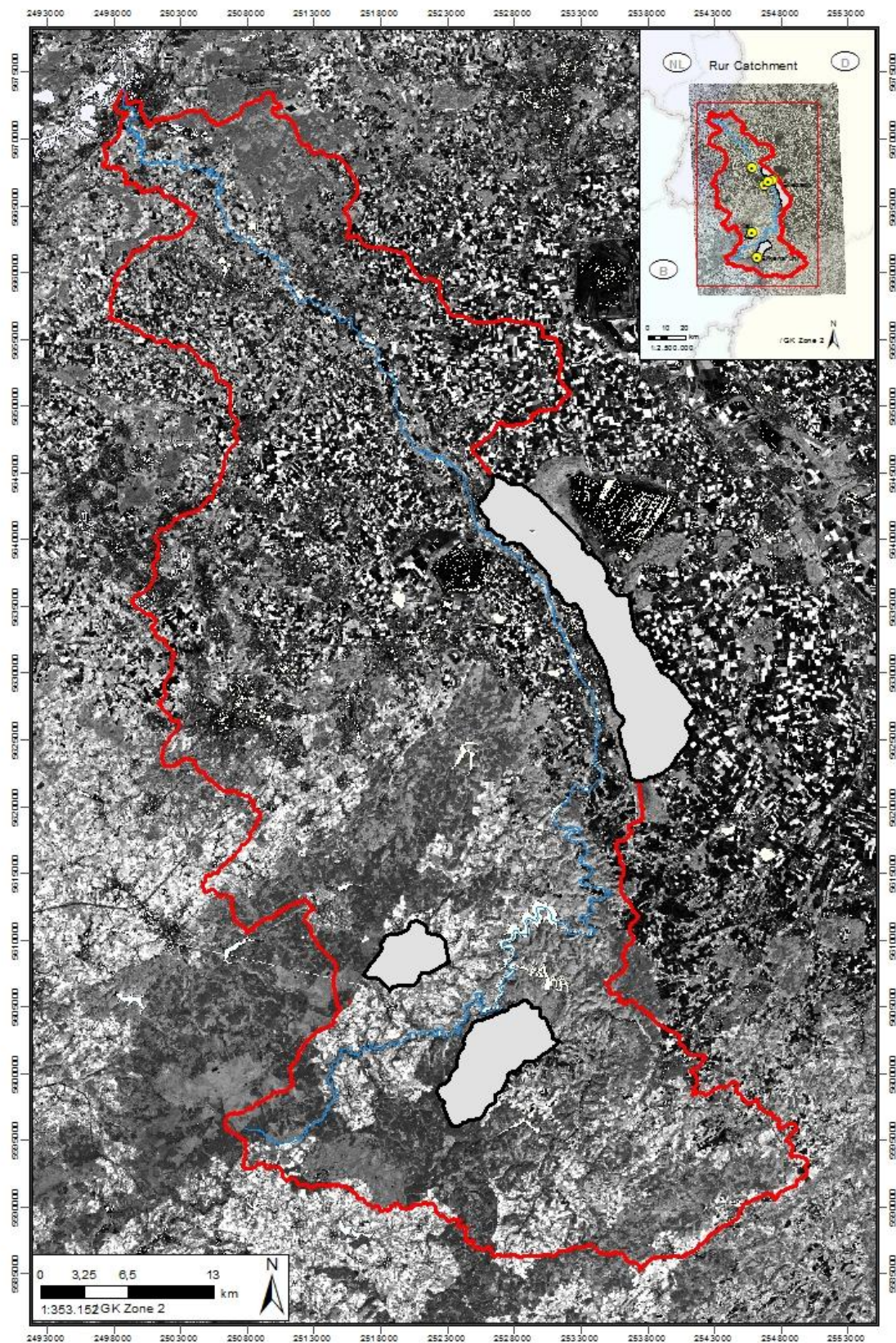


Documentation – LAI atcor_landsat_09_09_2008

Content	
files:	<p>data</p> <p style="text-align: center;">atcor_09_09_2008_us_120_essen_flx</p> <p style="text-align: center;">Tiff File with atmospheric filter including the LAI data</p> <p>documentation</p> <p style="text-align: center;">this file</p> <p style="text-align: center;">atcor_09_09_2008_us_120_essen_flx.jpg</p>
data size:	<p>data folder: 136 MB</p> <p>ZIP-file: 29 MB</p>
extend:	Rur Catchment as seen in the overview map
Dataset production:	Susanne Haas
provider:	USGS (rs_data)
language:	English
date of publication:	2013
date of purchase:	September 9 th 2008
Description	
description:	<p>LAI data produced with ATCOR, based on LANDSAT RS data of September 9th 2008.</p> <p>To carry out an atmosphere correction by means of ATCOR, the following parameters are required: the height about zero, a „Calibration file“, the Solar Zenith, the Solar Azimuth, Satellite Azimuth, the choice of an atmosphere model and an aerosol type as well as the evaluation "visibility".</p> <p>To elect the atmosphere model adequately and to determine correctly the "Visibility", middle "Water Vapour Column" and the "Visibility" was calculated first by means of the products MODIS MOD04 (aerosol MODIS Product) and MOD05 (MODIS Totally Perceptible Water Product) for the investigation area.</p>

	<p>Besides, were used excluding "Very Good Confidence Pixels". The results are shown in the following chart. Nevertheless, the so calculated values often did not present themselves adequately.</p> <table><tr><td></td><td></td><td></td><td>Water Vapour Column</td><td>Visibility</td></tr><tr><td>09/09/2008</td><td>30m</td><td>Euromap/GAF</td><td>1,4</td><td>51,72</td></tr></table> <p>In the following the parameters the atmosphere correction was carried out with should be briefly documented.</p> <p>9th of September 2008: LANDSAT</p> <p>Calibration file: The coefficients were taken first from the Header file and are right with the publication of CHANDER et Al.; because, nevertheless, with the Calibrationfile provided by ATCOR could be achieved.</p> <p>Atmosphere model: US standard</p> <p>Visibility: (estimated:59) 120</p> <p>Solar Zenith: Because no Header file existed, "Solar elevation" had to be calculated by means of the NOAA Solar position Calculators. In this way it was calculated solar elevation by 41.16 °. This result corresponds with the "Solar elevation" other Landsat photos which were shot in a similar period of other years. Accordingly amounts to "Solar zenith" 48.16 °.</p> <p>Scale Factor: 4</p> <p>Comment: ATTENTION: the deficit values could not be eliminated completely faulty atmosphere correction; this can be probably led back on the lacking calibration by Landsat</p> <p>The coefficients calculate the LAI by means of the attempt of BARET & GUYOT 1991 assumed from CHOUDURY et Al. in 1994. The coefficients were chosen for cotton, because the originated picture was relatively poor in contrast. On this occasion, the relation was used between LAI and SAVI. The coefficients read in detail: a0 = 0.82, a1 = 0.78, a2 = 0.6. The LAI data are in Layer2. They suffice from 0-10 000 and a Scale Factor of 1000 was used.</p> <p>Literature</p> <p><i>Geosystems (2002): Calibration Files for ASTER in ATCOR. http://gis-lab.info/docs/calibration_files_for_aster_atcor_v20x.pdf. 2011-09-18.</i></p> <p><i>KLISCH, A. (2003): Ableitung von Blattflächenindex und Bedeckungsgrad aus Fernerkundungsdaten für das Erosionsmodell EROSION 3D. Dissertation. Universität Potsdam.</i></p>				Water Vapour Column	Visibility	09/09/2008	30m	Euromap/GAF	1,4	51,72
			Water Vapour Column	Visibility							
09/09/2008	30m	Euromap/GAF	1,4	51,72							
abbreviations used in data:	not necessary										

Example



With atmospheric filter

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