

Validation against data from UBA web map viewer

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To ensure that the raster data and the extraction method yield correct results, values have been compared to those provided by the [UBA web map viewer for N deposition](#). The workflow was as follows:

1. Randomly choose a point in the south, northeast and northwest of Germany -> ExamplePointCoords.csv
2. Note the total inorganic N deposition for all land use types at these three locations from the [UBA web map viewer for N deposition](#).
3. Extract the total inorganic N deposition from raster files provided by the UBA at these three locations using the scripts Extract_point_data_from_ESRI_ASCII_raster.R and Post_process_extracted_data.R. The raster files are provided on request by the German Environment Agency (UBA).
4. Compare the two data sources using Validation_against_data_from_UBA_website.R -> ValidationResults.csv.

All 30 deposition values are identical (3 locations with 10 land use types each). This suggests that the workflow described here works and that the raster files provided by the UBA are identical to the data shown in the UBA web map viewer for N deposition.

LocationName	Land Use Class	LatWGS84	LonWGS84	Rechtswert GK3	Hochwert GK3	LandUseTypeDE	N deposition manually extracted from UBA web map viewer (kgN / ha / yr)	Mean N deposition 2013-015 from raster files provided by UBA (kgN / ha / yr)	Difference (kgN / ha / yr)
Northeast	ara	52.978401	13.785246	3821400	5882500	Ackerland	10	10	0
Northeast	cnf	52.978404	13.785252	3821400	5882500	Nadelwald	14	14	0
Northeast	crp	52.978402	13.785248	3821400	5882500	Dauerkulturen	11	11	0
Northeast	dec	52.978403	13.78525	3821400	5882500	Laubwald	13	13	0
Northeast	grs	52.978402	13.785255	3821400	5882500	Wiesen und Weiden	10	10	0
Northeast	mix	52.978403	13.785251	3821400	5882500	Mischwald	14	14	0
Northeast	oth	52.978402	13.785249	3821400	5882500	Dünen und Felsfluren	9	9	0
Northeast	sem	52.978404	13.785253	3821400	5882500	semi-natürliche Vegetation	11	11	0
Northeast	urb	52.978401	13.785247	3821400	5882500	bebautes Gebiet	13	13	0
Northeast	wat	52.978405	13.785254	3821400	5882500	Wasserflächen	10	10	0
Northwest	ara	52.689749	8.141097	3442000	5840000	Ackerland	31	31	0
Northwest	cnf	52.689749	8.141097	3442000	5840000	Nadelwald	38	38	0
Northwest	crp	52.689749	8.141097	3442000	5840000	Dauerkulturen	35	35	0
Northwest	dec	52.689749	8.141097	3442000	5840000	Laubwald	33	33	0
Northwest	grs	52.689749	8.141097	3442000	5840000	Wiesen und Weiden	25	25	0
Northwest	mix	52.689749	8.141097	3442000	5840000	Mischwald	36	36	0
Northwest	oth	52.689749	8.141097	3442000	5840000	Dünen und Felsfluren	32	32	0
Northwest	sem	52.689749	8.141097	3442000	5840000	semi-natürliche Vegetation	26	26	0
Northwest	urb	52.689749	8.141097	3442000	5840000	bebautes Gebiet	55	55	0
Northwest	wat	52.689749	8.141097	3442000	5840000	Wasserflächen	36	36	0
South	ara	47.547458	11.190988	3665000	5270000	Ackerland	16	16	0
South	cnf	47.547458	11.190988	3665000	5270000	Nadelwald	18	18	0
South	crp	47.547458	11.190988	3665000	5270000	Dauerkulturen	17	17	0
South	dec	47.547458	11.190988	3665000	5270000	Laubwald	18	18	0
South	grs	47.547458	11.190988	3665000	5270000	Wiesen und Weiden	16	16	0
South	mix	47.547458	11.190988	3665000	5270000	Mischwald	18	18	0
South	oth	47.547458	11.190988	3665000	5270000	Dünen und Felsfluren	16	16	0
South	sem	47.547458	11.190988	3665000	5270000	semi-natürliche Vegetation	16	16	0
South	urb	47.547458	11.190988	3665000	5270000	bebautes Gebiet	18	18	0
South	wat	47.547458	11.190988	3665000	5270000	Wasserflächen	16	16	0