

Rothamsted Repository Download

A - Papers appearing in refereed journals

Lembrechts, J., Van den Hoogen, J., Aalto, J., Ashcroft, M. B., De Frenne, P., Jemppinen, J., Kopecky, M., Luoto, M., Maclean, I. M. D., Crowther, T., Bailey, J. J., Haesen, S., Klinges, D. H., Niittyinen, P., Scheffers, B., Van Meerbeek, K., Aartsma, P., Abdalaze, O., Abedi, M., Aerts, R., Ahmadian, N., Ahrends, A., Alatao, J. M., Alexander, J. M., Allonsius, C. N., Altman, J., Ammann, A., Andres, C., Andrews, C., Ardo, J., Arriga, N., Arzac, A., Aschero, V., Assis, R. L., Assmann, J. J., Bader, M. Y., Bahalkeh, K., Barancok, P., Barrio, I. C., Barros, A., Barthel, M., Basham, E. W., Bauters, M., Bazzichetto, M., Marchesini, L., Bell, M.C., Benavides, J. C., Benito Alonso, J. L., Berauer, B. J., Bjerke, J., Bjork, R. G., Bjorkman, M. P., Bjornsdottir, K., Blonder, B., Boeckx, P., Boike, J., Bokhorst, S., Brum, B. N. S., Bruna, J., Buchmann, N., Buysse, P., Camargo, J. L., Campoe, O. C., Candan, O., Canessa, R., Cannone, N., Carbognani, M., Carnicer, J., Casanova-Katny, A., Cesarz, S., Chojnicki, B., Choler, P., Chown, S. L., Cifuentes, E. F., Ciliak, M., Contador, T., Convey, P., Cooper, E., Cremonese, E., Curasi, S. R., Curtis, R., Cutini, M., Dahlberg, C. L., Daskalova, G., De Pablo, M. A., Della Chiesa, S., Dengler, B., Deronde, B., Descombes, P., Di Cecco, V., Di Musciano, M., Dick, J., Dimarco, D. R., Dolezal, J., Dorrepaal, E., Dusek, J., Eisenhauer, N., Ejtehadi, H., Eklundh, L., Erfanian, M., Erickson, T. E., E. Erschbamer, B., Eugster, W., Ewers, R. M., Exton, D. A., Fanin, N., Fazlioglu, F., Feigenwinter, I., Fenu, G., Ferlian, O., Fernandez Calzado, M. R., Fernandez-Pascual, E., Finckh, M., Finger Higgens, R., Forte, T. G. W., Freeman, E. C., Frei, E. R., Fuentes-Lillo, E., Garcia, R. A., Garcia,

M. B., Geron, C., Gharun, M., Ghosn, D., Gigauri, K., Gobin, A., Goded, I., Goeckede, M., Gottschall, F., Goulding, K. W. T., Govaert, S., Graae, B. J., Greenwood, S., Greise, C., Grelle, A., Guenard, B., Guglielmin, M., Guillemot, J., Haase, H., Haider, S., Halbritter, A. H., Hamid, M., Hammerle, A., Hampe, A., Haugum, S. V., Hederova, L., Heinesch, B., Helfter, C., Hepenstrick, D., Herberich, M., Herbst, M., Hermanutz, L., Hik, D. S., Hoffren, R., Homeier, J., Hortnagl, L., Hoye, T. T., Hrbacek, F., Hylander, K., Iwata, h., Jackowicz-Korczynski, M. A., Jactel, H., Jarveoja, J., Olejnik, J., Jastrzebowski, S., Jentsch, A., Jimenez, J. J., Jonsdottir, I. S., Souza, J., Jucker, T., Jump, A. S., Juszczak, R., Kanka, R., Kaspar, V., Kazakis, G., Kelly, J., Khuroo, A. A., Klemedtsson, L., Klisz, M., Kljun, N., Knohl, A., Kobler, J., Kollar, J., Kolle, O., Kotowska, M. M., Kovacs, B., Kreyling, J., Lamprecht, A., Lang, S. I., Larson, C., Larson, K., Laska, K., Le Maire, G., Leihy, R. I., Lens, L., Liljebladh, B., Lohila, A., Lorite, J., Loubet, B., Lynn, J., Macek, M., Mackenzie, R., Magliulo, E., Maier, R., Malfasi, f., Malis, F., Man, M., Manca, G., Manco,a., Manise, T., Manolaki, P., Marciniak, F., Nardino, M., Matula, R., Mazzolari, A. C., Medinets, S., Medinets,v., Meeussen, C., Merinero, S., De Cassia Guimaraes Mesquita, R., Meusburger, K., Meysman, F., Michaletz, S. T., Milbau, A., Moiseev, D., Moiseev, P., Mondoni, A., Montagnani, L., Moriana-Armendariz, M., Morra di Cella, U., Morsdorf, M., Mosedale, J. R., Muffler, L., Munoz-Rojas, M., Myers, J. A., Myers-Smith, I., Nagy, L., Naujokaitis-Lewis, I., Newling, E., Nicklas, L., Niedrist, G., Niessner, A., Nilsson, M. B., Normand, S., Noretto, M. D., Nouvellon, Y., Nunez, M. A., Ogaya, R., Ogee, J., Okello, J., Olesen, J. E., Opedal, O., Orsenigo, S., Palaj, A., Pampuch, T., Panov, A. V., Partel, M., Pastor, A., Pauchard, A., Pauli, H., Pavelka, M., Pearse, W. D., Peichl, M., Pellissier, L., Penczykowski, R. M., Penuelas, J., Bon, M., Petraglia,

A., Phartyal, S. S., Phoenix, G. K., Pio, C., Pitacco, A., Pitteloud, C., Plichta, R., Porro, F., Portillo-Estrada, M., Poulenard, J., Poyatos, R., Prokushkin, A. S., Puchalka, R., Puscas, M., Radujkovic, D., Randall, K., Ratier Backes, A., Remmele, S., Remmers, W., Renault, D., Risch, A. C., Rixen, C., Robroek, B., Rocha, A. V., Rossi, C., Rossi, G., Rounsard, O., Rubtsov, V. A., Sagot, C., Sallo Bravo, J., Santos, C. C., Sarneel, J. M., Scharnweber, T., Schmeddes, J., Schmidt, M., Scholten, T., Schwartz, N., Scott, T., Seeber, J., Segalin de Andrade, A. C., Seipel, T., Semenchuk, P. R., Senior, R. A., Serra-Diaz, J. M., Sewerniak, P., Shekhar, A., Sidenko, N. V., Siebicke, L., Siegwart Collier, L., Simpson, E., Siqueira, D., Sitkova, Z., Six, J., Smiljanic, M., Smith, S. W., Smith-Tripp, S., Somers, B., Sorensen, M. V., Souza, B. I., Souza Dias, A., Spasojevic, M., Speed, J. D. M., Spicher, F., Stanisci, A., Steinbauer, K., Steinbrecher, R., Steinwandter, M., Stemkovski, M., Stephan, J. G., Stiegler, C., Stoll, C., Svatek, M., Svoboda, M., Tagesson, T., Tanentzap, A. J., Tanneberger, F., Theurillat, J-P., Thomas, H., Thomas, A., Tielborger, K., Tomaselli, M., Treier, U. A., Trouillier, M., Turtureanu, P. D., Tutton, R., Tyystjarvi, V. A., Ueyama, M., Ujhazy, K., Ujhazyova, M., Uogintas, D., Urban, A. V., Urban, J., Urbaniak, M., Ursu, T-M., Vaccari, F. P., Van de Vondel, S., Van den Brink, L., Van Geel, M., Vandvik, V., Vangansbeke, P., Varlagin, A., Veen, G. F., Veenendaal, E., Venn, S. E., Verbeeck, H., Verbruggen, E., Verheijen, F. G. A., Villar, L., Vitale, L., Vittoz, P., Vives-Ingla, M., Von Oppen, J., Walz, J., Wang, R., Wang, Y., Way, R. G., Wedegartner, R. E. M., Weigel, R., Wild, J., Wilkinson, M., Wilmking, M., Wingate, L., Winkler, M., Wipf, S., Wohlfahrt, G., Xenakis, G., Yang, Y., Yu, Z., Yu, K., Zellweger, F., Zhang, J., Zhang, Z., Zhao, P., Ziemblinska, K., Zimmermann, R., Zong, S., Zyryanov, V. I., Nijs, I. and

Lenoir, J. 2021. Global maps of soil temperature. *Global Change Biology*.
<https://doi.org/10.1111/gcb.16060>

The publisher's version can be accessed at:

- <https://doi.org/10.1111/gcb.16060>

The output can be accessed at: <https://repository.rothamsted.ac.uk/item/98410/global-maps-of-soil-temperature>.

© 29 December 2021, Please contact library@rothamsted.ac.uk for copyright queries.

Name	Band_Name
Aridity index	Aridity_Index
Topo – slope	EarthEnvTopoMed_1stOrderPartialDerivEW
Topo – elevation	EarthEnvTopoMed_Elevation
Topo – roughness	EarthEnvTopoMed_Roughness
Topo – TRI	EarthEnvTopoMed_TerrainRuggednessIndex
Abovegr. Biomass	GlobBiomass_AboveGroundBiomass
Human development	Human_Development_Percentage
Barren land cover	LandCoverClass_Barren
Reflectance_1	Nadir_Reflectance_Band1
Reflectance_2	Nadir_Reflectance_Band2
Reflectance_3	Nadir_Reflectance_Band3
Reflectance_4	Nadir_Reflectance_Band4
Reflectance_5	Nadir_Reflectance_Band5
Reflectance_6	Nadir_Reflectance_Band6
Reflectance_7	Nadir_Reflectance_Band7
NDVI	NDVI
PET	PET
Population density	Population_Density
Abs. depth to bedr.	SG_Absolute_depth_to_bedrock
Bulk density	SG_Bulk_density_005cm
Depth to bedrock	SG_Depth_to_bedrock
Sand content	SG_Sand_Content_005cm
SOC density	SG_SOC_Density_005cm
Soil pH	SG_Soil_pH_H2O_005cm
Monthly vapor pres.	WorldClim2_H2OVaporPressure_MonthXX
Monthly solar rad.	WorldClim2_SolarRadiation_MonthXX
Monthly max T	CHELSA_tmax10_XX
Monthly min T	CHELSA_tmin10_XX
Monthly mean T	CHELSA_temp10_XX
Monthly precip.	CHELSA_prec_XX
Resolve biomes	Resolve_Biome
Monthly cloud cover	
Monthly snow cover	

Description	Layer_Group
Global AI (Aridity Index)	Process
EarthEnvTopoMed_1stOrderPartialDerivEW	Topography
Elevation	Topography
Roughness	Topography
Terrain Ruggedness Index	Topography
Above ground biomass (AGB, unit: tons/ha i.e., Mg/ha) for the year 2010	Vegetative
Percentage of urban/built-up areas and/or cultivated/managed vegetation	Process
Percentage of the pixel area covered by barren ground	Process
Reflectance band 1 (620–670nm)	Vegetative
Reflectance band 2 (841–876nm)	Vegetative
Reflectance band 3 (459–479nm)	Vegetative
Reflectance band 4 (545–565nm)	Vegetative
Reflectance band 5 (1230–1250nm)	Vegetative
Reflectance band 6 (1628–1652nm)	Vegetative
Reflectance band 7 (2105–2155nm)	Vegetative
Normalized Difference Vegetation Index	Vegetative
Potential Evapotranspiration	Process
Population density	Anthropogenic
Absolute Depth to Bedrock	Soil
Bulk density (fine earth) at 0.05m	Soil
Depth to Bedrock (up to 200cm)	Soil
Sand content (50–2000 micro meter) at 0.05m	Soil
Soil organic carbon content (fine earth fraction) at 0.05m	Soil
Soil pH x 10 in H2O at 0.05m	Soil
Water vapor pressure for month XX	Climatic
Solar radiation for month XX	Climatic
Maximum temperature for month XX (year range 1979–2013)	Climatic
Minimum temperature for month XX (year range 1979–2013)	Climatic
Mean temperature for month XX (year range 1979–2013)	Climatic
Precipitation for month XX (year range 1979–2013)	Climatic
Resolve Biomes	Vegetative
Percentage of cloud cover for month XX	Climatic
Percentage of snow cover for month XX	Climatic

Units	Original resolution (in m)
AI Value	1000
unitless	1000
meters	1000
unitless	1000
unitless	1000
tons/ha	500
%	1000
%	1000
scaled value (0.0001)	500
scaled value (0.0001)	500
scaled value (0.0001)	500
scaled value (0.0001)	500
scaled value (0.0001)	500
scaled value (0.0001)	500
scaled value (0.0001)	500
scaled value (0.0001)	500
mm	1000
Number of people per cell	1000
cm	250
kg / cubic-meter	250
cm (up to 200)	250
mass fraction in %	250
g per kg	250
pH x 10	250
kPa	1000
kJ/(m ² •day)	1000
°C x 10	1000
°C x 10	1000
°C x 10	1000
mm	1000
class	1000
%	500
%	500

Source

<http://www.cgiar-csi.org/data/global-aridity-and-pet-database>

<https://www.earthenv.org/topography>

<https://www.earthenv.org/topography>

<https://www.earthenv.org/topography>

<https://www.earthenv.org/topography>

http://globbiomass.org/wp-content/uploads/GB_Maps/Globbiomass_global_dataset.html

<https://www.earthenv.org/landcover>

<https://www.earthenv.org/landcover>

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MCD43A4

<https://explorer.earthengine.google.com/#detail/MODIS%2F006%2FMYD13Q1>

<http://www.cgiar-csi.org/data/global-aridity-and-pet-database>

https://ghsl.jrc.ec.europa.eu/ghs_pop2019.php

<https://www.soilgrids.org> ; <https://www.isric.org/explore/wosis/accessing-wosis-derived-dat>

<https://www.soilgrids.org> ; <https://www.isric.org/explore/wosis/accessing-wosis-derived-dat>

<https://www.soilgrids.org> ; <https://www.isric.org/explore/wosis/accessing-wosis-derived-dat>

<https://www.soilgrids.org> ; <https://www.isric.org/explore/wosis/accessing-wosis-derived-dat>

<https://www.soilgrids.org> ; <https://www.isric.org/explore/wosis/accessing-wosis-derived-dat>

<https://www.soilgrids.org> ; <https://www.isric.org/explore/wosis/accessing-wosis-derived-dat>

<http://worldclim.org/version2>

<http://worldclim.org/version2>

<https://chelsa-climate.org/timeseries/>

<https://chelsa-climate.org/timeseries/>

<https://chelsa-climate.org/timeseries/>

<https://chelsa-climate.org/timeseries/>

https://developers.google.com/earth-engine/datasets/catalog/RESOLVE_ECOREGIONS_2017

Based on MODIS

Monthly snow probability is based on a pixel-wise frequency of snow occurrence (snow cover >

Citation

Zomer RJ, Trabucco A, Bossio DA, van Straaten O, Verchot LV, 2008. Climate Change Mitigation
<https://www.nature.com/articles/sdata201840>
<https://www.nature.com/articles/sdata201840>
<https://www.nature.com/articles/sdata201840>
<https://www.nature.com/articles/sdata201840>
<https://doi.org/10.1594/PANGAEA.894711>

Zomer RJ, Trabucco A, Bossio DA, van Straaten O, Verchot LV, 2008. Climate Change Mitigation

:assets
:assets
:assets
:assets
:assets
:assets

Fick, S.E. and R.J. Hijmans, 2017. Worldclim 2: New 1-km spatial resolution climate surfaces for
Fick, S.E. and R.J. Hijmans, 2017. Worldclim 2: New 1-km spatial resolution climate surfaces for
<https://www.nature.com/articles/sdata2017122>
<https://www.nature.com/articles/sdata2017122>
<https://www.nature.com/articles/sdata2017122>
<https://www.nature.com/articles/sdata2017122>

> 10%) in MODIS daily snow cover products (MOD10A1 & MYD10A1) in 2001–2019 at a resolutic

: A Spatial Analysis of Global Land Suitability for Clean Development Mechanism Affore

: A Spatial Analysis of Global Land Suitability for Clean Development Mechanism Affore

r global land areas. International Journal of Climatology.
r global land areas. International Journal of Climatology.

on of ~500 meters.

Restoration and Reforestation. Agric. Ecosystems and Envi

Restoration and Reforestation. Agric. Ecosystems and Envi