EEA geospatial data catalogue

EUNIS habitat type F2.3, predicted habitat suitability - version 1, June 2016

The modelled suitability for the EUNIS habitat type is an indication of where conditions are favourable for the habitat type based on sample plot data (Braun-Blanquet database) and the Maxent software package. The modelled suitability map may be used as a proxy for the geographical distribution of the habitat type. Note however that it is not representing the actual distribution of the habitat type.

Also note that predictions are less reliable due to data deficiency in the eastern part of Europe, and to a lesser extent to the Scandinavian countries.

Geographic restriction for plot observations: n/a

Remarks: Prediction in Germany should be ignored.

Prediction in eastern part of Europe (Caucasus) uncertain due to lack of data for that area.

Simple

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Point of contact

No information provided.

Maintenance and update frequency	Unknown
GEMET - INSPIRE themes, version 1.0	• Habitats and biotopes
GEMET	• natural area • tundra • terrestrial ecosystem • heathland
Keywords	
Keywords	
Place	• Europe
EEA topics	• Biodiversity
Use limitation	

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Access constraints	Other restrictions
Other constraints	no limitations to public access
Spatial representation type	Grid
Distance	1 1 km
Language of dataset	English
Character set	UTF8
Topic category	• Biota

71.00	N	34.50	S	46.00	E	-24.50	W

Begin date	1940-01-01
End date	2011-12-31
Coordinate reference system identifier	EPSG:3035
Distribution format	• GeoTIFF ( )

OnLine resource

Protocol	Linkage	Name
EEA:FILEPATH	https://sdi.eea.europa.eu/webdav/datastore/public/eea_r_3035_1_km_eunis-hab-f2-3_p_1940-2011_v01_r00/F2-3_ed1.tif	
WWW:URL	https://sdi.eea.europa.eu/data/201bab8e-e0bf-4137-bd7b-82999af0f9c4	Direct download

Hierarchy level	Dataset

Conformance result

Date (Publication)	2010-12-08
Explanation	See the referenced specification

Statement

The database compiled for the Braun-Blanquet project is a compilation of various national and regional vegetation databases. The maintenance of these databases is in principle in the hands of the custodians. However, before uploading the databases into Braun-Blanquet database a quality check is performed by Alterra and Masaryk University. If possible, detected errors are corrected and reported back to the data provider. For the modelling of the habitat suitability map the Maxent software is used (http://www.cs.princeton.edu/~schapire/maxent/). The grid values in the map represent the probability (ranging from 0-1) that the cell is suitable for the habitat.

The grid file represents the habitat suitability of the EUNIS type. For the modelling the widely used software Maxent for maximum entropy modelling of species' geographic distributions was used. Maxent is a general-purpose machine-learning method with a simple and precise mathematical formulation, and has a number of aspects that make it well-suited for species distribution modelling when only presence (occurrence) data but not absence data are available (Philips et al. 2006). Because EUNIS habitats have a particular species composition, they are assumed to respond to specific ecological requirements, allowing us to generate correlative estimates of geographic distributions. Modelling habitats that have been floristically defined is a well-known procedure for ecological modelling at local scales, and a promising technique to be applied also at the continental level.

The Maxent method considers presence data (known observations of a given entity) and the so-called background data. Background data comprise a set of points used to describe the environmental variation of the study area according to the available environmental layers. It is assumed that these layers represent well the most important ecological gradients on a European scale. As layers the following environmental parameters have been used: Potential Evapotranspiration, Topsoil pH, Solar radiation, Temperature Seasonality (standard deviation *100), Mean Temperature of Wettest Quarter, Annual Precipitation, Precipitation Seasonality (Coefficient of Variation), Precipitation of Warmest Quarter & Distance to water (rivers, lakes, sea).

Statistical output of the model:

#Training samples: 310

Regularized training gain: 1.3861

Unregularized training gain: 1.6717

Iterations: 500

Training AUC: 0.9336

#Test samples: 34

Test gain: 1.5736

Test AUC: 0.9223

AUC Standard Deviation: 0.0127

#Background points: 5171

bio_12_etrs2_ras contribution: 16.9077

bio_15_etrs2_ras contribution: 4.0239

bio_18_etrs2_ras contribution: 24.867

bio_4_etrs2_ras contribution: 13.9288

bio_8_etrs2_ras contribution: 2.2471

bld_m_sd1_1km_eu_ll contribution: 0.6196

cecsum_m_sd1_1km_eu_ll contribution: 3.7884

clyppt_m_sd1_1km_eu_ll contribution: 0.4739

crfvol_m_sd1_1km_eu_ll contribution: 1.1602

dist2water1km contribution: 0.6474

orcdrc_m_sd1_1km_eu_ll contribution: 19.1663

pet_he_yr contribution: 8.9444

sltppt_m_sd1_1km_eu_ll contribution: 1.591

sndppt_m_sd1_1km_eu_ll contribution: 0.5388

solar_1km contribution: 1.0955

bio_12_etrs2_ras permutation importance: 17.4469

bio_15_etrs2_ras permutation importance: 5.4636

bio_18_etrs2_ras permutation importance: 7.9392

bio_4_etrs2_ras permutation importance: 17.8973

bio_8_etrs2_ras permutation importance: 4.2565

bld_m_sd1_1km_eu_ll permutation importance: 0.6678

cecsum_m_sd1_1km_eu_ll permutation importance: 3.681

clyppt_m_sd1_1km_eu_ll permutation importance: 1.8863

crfvol_m_sd1_1km_eu_ll permutation importance: 1.8538

dist2water1km permutation importance: 0.6989

orcdrc_m_sd1_1km_eu_ll permutation importance: 11.4509

pet_he_yr permutation importance: 19.2714

sltppt_m_sd1_1km_eu_ll permutation importance: 4.0789

sndppt_m_sd1_1km_eu_ll permutation importance: 2.743

solar_1km permutation importance: 0.6645

Training gain without bio_12_etrs2_ras: 1.3432

Training gain without bio_15_etrs2_ras: 1.3516

Training gain without bio_18_etrs2_ras: 1.3637

Training gain without bio_4_etrs2_ras: 1.3257

Training gain without bio_8_etrs2_ras: 1.3673

Training gain without bld_m_sd1_1km_eu_ll: 1.3783

Training gain without cecsum_m_sd1_1km_eu_ll: 1.3827

Training gain without clyppt_m_sd1_1km_eu_ll: 1.3779

Training gain without crfvol_m_sd1_1km_eu_ll: 1.3775

Training gain without dist2water1km: 1.3824

Training gain without orcdrc_m_sd1_1km_eu_ll: 1.3633

Training gain without pet_he_yr: 1.332

Training gain without sltppt_m_sd1_1km_eu_ll: 1.3829

Training gain without sndppt_m_sd1_1km_eu_ll: 1.3827

Training gain without solar_1km: 1.3726

Training gain with only bio_12_etrs2_ras: 0.6005

Training gain with only bio_15_etrs2_ras: 0.2783

Training gain with only bio_18_etrs2_ras: 0.7631

Training gain with only bio_4_etrs2_ras: 0.3674

Training gain with only bio_8_etrs2_ras: 0.2441

Training gain with only bld_m_sd1_1km_eu_ll: 0.5341

Training gain with only cecsum_m_sd1_1km_eu_ll: 0.6645

Training gain with only clyppt_m_sd1_1km_eu_ll: 0.1743

Training gain with only crfvol_m_sd1_1km_eu_ll: 0.5479

Training gain with only dist2water1km: 0.1112

Training gain with only orcdrc_m_sd1_1km_eu_ll: 0.6554

Training gain with only pet_he_yr: 0.493

Training gain with only sltppt_m_sd1_1km_eu_ll: 0.247

Training gain with only sndppt_m_sd1_1km_eu_ll: 0.33

Training gain with only solar_1km: 0.5463

Test gain without bio_12_etrs2_ras: 1.521

Test gain without bio_15_etrs2_ras: 1.439

Test gain without bio_18_etrs2_ras: 1.5765

Test gain without bio_4_etrs2_ras: 1.5296

Test gain without bio_8_etrs2_ras: 1.5315

Test gain without bld_m_sd1_1km_eu_ll: 1.5612

Test gain without cecsum_m_sd1_1km_eu_ll: 1.5522

Test gain without clyppt_m_sd1_1km_eu_ll: 1.5853

Test gain without crfvol_m_sd1_1km_eu_ll: 1.567

Test gain without dist2water1km: 1.6299

Test gain without orcdrc_m_sd1_1km_eu_ll: 1.5764

Test gain without pet_he_yr: 1.4934

Test gain without sltppt_m_sd1_1km_eu_ll: 1.58

Test gain without sndppt_m_sd1_1km_eu_ll: 1.5659

Test gain without solar_1km: 1.5562

Test gain with only bio_12_etrs2_ras: 0.8891

Test gain with only bio_15_etrs2_ras: 0.5651

Test gain with only bio_18_etrs2_ras: 1.1259

Test gain with only bio_4_etrs2_ras: 0.4029

Test gain with only bio_8_etrs2_ras: 0.3841

Test gain with only bld_m_sd1_1km_eu_ll: 0.7037

Test gain with only cecsum_m_sd1_1km_eu_ll: 0.742

Test gain with only clyppt_m_sd1_1km_eu_ll: 0.3473

Test gain with only crfvol_m_sd1_1km_eu_ll: 0.7262

Test gain with only dist2water1km: 0.0383

Test gain with only orcdrc_m_sd1_1km_eu_ll: 0.6827

Test gain with only pet_he_yr: 0.6822

Test gain with only sltppt_m_sd1_1km_eu_ll: 0.3292

Test gain with only sndppt_m_sd1_1km_eu_ll: 0.4808

Test gain with only solar_1km: 0.6589

AUC without bio_12_etrs2_ras: 0.9173

AUC without bio_15_etrs2_ras: 0.9109

AUC without bio_18_etrs2_ras: 0.9223

AUC without bio_4_etrs2_ras: 0.9206

AUC without bio_8_etrs2_ras: 0.9194

AUC without bld_m_sd1_1km_eu_ll: 0.9225

AUC without cecsum_m_sd1_1km_eu_ll: 0.9212

AUC without clyppt_m_sd1_1km_eu_ll: 0.9226

AUC without crfvol_m_sd1_1km_eu_ll: 0.9216

AUC without dist2water1km: 0.9284

AUC without orcdrc_m_sd1_1km_eu_ll: 0.9226

AUC without pet_he_yr: 0.9149

AUC without sltppt_m_sd1_1km_eu_ll: 0.9227

AUC without sndppt_m_sd1_1km_eu_ll: 0.9209

AUC without solar_1km: 0.9198

AUC with only bio_12_etrs2_ras: 0.8437

AUC with only bio_15_etrs2_ras: 0.776

AUC with only bio_18_etrs2_ras: 0.8738

AUC with only bio_4_etrs2_ras: 0.7405

AUC with only bio_8_etrs2_ras: 0.6806

AUC with only bld_m_sd1_1km_eu_ll: 0.8152

AUC with only cecsum_m_sd1_1km_eu_ll: 0.8273

AUC with only clyppt_m_sd1_1km_eu_ll: 0.754

AUC with only crfvol_m_sd1_1km_eu_ll: 0.823

AUC with only dist2water1km: 0.6304

AUC with only orcdrc_m_sd1_1km_eu_ll: 0.7952

AUC with only pet_he_yr: 0.8027

AUC with only sltppt_m_sd1_1km_eu_ll: 0.6815

AUC with only sndppt_m_sd1_1km_eu_ll: 0.7782

AUC with only solar_1km: 0.8154

Entropy: 7.1847

Prevalence (average of logistic output over background sites): 0.1241

Fixed cumulative value 1 cumulative threshold: 1

Fixed cumulative value 1 logistic threshold: 0.0195

Fixed cumulative value 1 area: 0.4531

Fixed cumulative value 1 training omission: 0.0032

Fixed cumulative value 1 test omission: 0

Fixed cumulative value 1 binomial probability: 7.47E-11

Fixed cumulative value 5 cumulative threshold: 5

Fixed cumulative value 5 logistic threshold: 0.1334

Fixed cumulative value 5 area: 0.2839

Fixed cumulative value 5 training omission: 0.0258

Fixed cumulative value 5 test omission: 0

Fixed cumulative value 5 binomial probability: 1.01E-20

Fixed cumulative value 10 cumulative threshold: 10

Fixed cumulative value 10 logistic threshold: 0.2251

Fixed cumulative value 10 area: 0.2259

Fixed cumulative value 10 training omission: 0.0516

Fixed cumulative value 10 test omission: 0.0588

Fixed cumulative value 10 binomial probability: 9.86E-24

Minimum training presence cumulative threshold: 0.2492

Minimum training presence logistic threshold: 0.0047

Minimum training presence area: 0.6453

Minimum training presence training omission: 0

Minimum training presence test omission: 0

Minimum training presence binomial probability: 7.71E-06

10 percentile training presence cumulative threshold: 18.007

10 percentile training presence logistic threshold: 0.3192

10 percentile training presence area: 0.1711

10 percentile training presence training omission: 0.1

10 percentile training presence test omission: 0.1471

10 percentile training presence binomial probability: 2.40E-26

Equal training sensitivity and specificity cumulative threshold: 23.5

Equal training sensitivity and specificity logistic threshold: 0.3752

Equal training sensitivity and specificity area: 0.145

Equal training sensitivity and specificity training omission: 0.1452

Equal training sensitivity and specificity test omission: 0.2353

Equal training sensitivity and specificity binomial probability: 5.29E-25

Maximum training sensitivity plus specificity cumulative threshold: 14.7775

Maximum training sensitivity plus specificity logistic threshold: 0.2827

Maximum training sensitivity plus specificity area: 0.1903

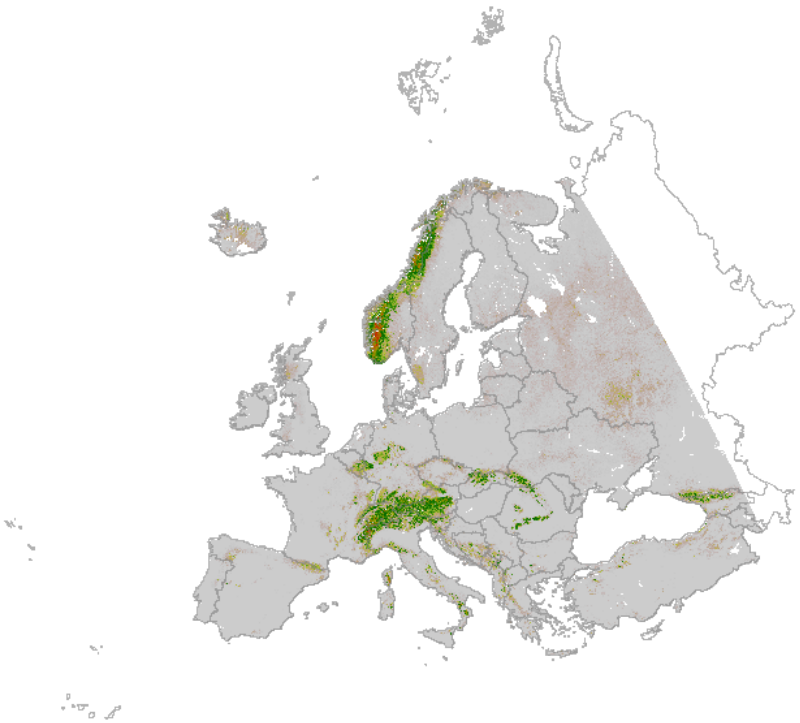
Maximum training sensitivity plus specificity training omission: 0.0613

	Maximum training sensitivity plus specificity test omission: 0.0882 Maximum training sensitivity plus specificity binomial probability: 4.22E-27 Equal test sensitivity and specificity cumulative threshold: 19.3368 Equal test sensitivity and specificity logistic threshold: 0.3372 Equal test sensitivity and specificity area: 0.1642 Equal test sensitivity and specificity training omission: 0.1097 Equal test sensitivity and specificity test omission: 0.1765 Equal test sensitivity and specificity binomial probability: 1.55E-25 Maximum test sensitivity plus specificity cumulative threshold: 7.0838 Maximum test sensitivity plus specificity logistic threshold: 0.1815 Maximum test sensitivity plus specificity area: 0.2551 Maximum test sensitivity plus specificity training omission: 0.0323 Maximum test sensitivity plus specificity test omission: 0 Maximum test sensitivity plus specificity binomial probability: 1.09E-23 Balance training omission, predicted area and threshold value cumulative threshold: 2.4436 Balance training omission, predicted area and threshold value logistic threshold: 0.0593 Balance training omission, predicted area and threshold value area: 0.3506 Balance training omission, predicted area and threshold value training omission: 0.0032 Balance training omission, predicted area and threshold value test omission: 0 Balance training omission, predicted area and threshold value binomial probability: 1.05E-15 Equate entropy of thresholded and original distributions cumulative threshold: 7.0838 Equate entropy of thresholded and original distributions logistic threshold: 0.1815 Equate entropy of thresholded and original distributions area: 0.2551 Equate entropy of thresholded and original distributions training omission: 0.0323 Equate entropy of thresholded and original distributions test omission: 0 Equate entropy of thresholded and original distributions binomial probability: 1.09E-23
Source	•

Metadata

File identifier	201bab8e-e0bf-4137-bd7b-82999af0f9c4 XML
Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2022-02-01T08:15:13.449Z
Metadata standard name	ISO 19115/19139
Metadata standard version	1.0
Metadata author	**Organisation name** / **Individual name** / **Electronic mail address** / **Website** / **Role** European Environment Agency / / sdi@eea.europa.eu / / Point of contact

Overviews



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