EEA geospatial data catalogue

EUNIS habitat type F2.4, 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: Pinus mugo does not occur in Scandinavia and therefore the prediction in this area 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-f2-4_p_1940-2011_v01_r00/F2-4_ed1.tif	
WWW:URL	https://sdi.eea.europa.eu/data/41b0dda2-f3ec-4a00-9628-ac9dc19182ba	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: 959

Regularized training gain: 1.33

Unregularized training gain: 1.4939

Iterations: 500

Training AUC: 0.9143

#Test samples: 106

Test gain: 1.5115

Test AUC: 0.9149

AUC Standard Deviation: 0.009

#Background points: 5453

bio_12_etrs2_ras contribution: 2.7221

bio_15_etrs2_ras contribution: 2.6403

bio_18_etrs2_ras contribution: 43.9529

bio_4_etrs2_ras contribution: 13.1648

bio_8_etrs2_ras contribution: 1.5025

bld_m_sd1_1km_eu_ll contribution: 7.3518

cecsum_m_sd1_1km_eu_ll contribution: 0.9019

clyppt_m_sd1_1km_eu_ll contribution: 0.3665

crfvol_m_sd1_1km_eu_ll contribution: 9.3161

dist2water1km contribution: 0.7246

orcdrc_m_sd1_1km_eu_ll contribution: 11.0593

pet_he_yr contribution: 1.8856

sltppt_m_sd1_1km_eu_ll contribution: 2.9277

sndppt_m_sd1_1km_eu_ll contribution: 0.069

solar_1km contribution: 1.415

bio_12_etrs2_ras permutation importance: 11.1987

bio_15_etrs2_ras permutation importance: 0.952

bio_18_etrs2_ras permutation importance: 15.0502

bio_4_etrs2_ras permutation importance: 24.8976

bio_8_etrs2_ras permutation importance: 5.7478

bld_m_sd1_1km_eu_ll permutation importance: 0.6055

cecsum_m_sd1_1km_eu_ll permutation importance: 8.6279

clyppt_m_sd1_1km_eu_ll permutation importance: 0.3552

crfvol_m_sd1_1km_eu_ll permutation importance: 5.9339

dist2water1km permutation importance: 0.9175

orcdrc_m_sd1_1km_eu_ll permutation importance: 5.3257

pet_he_yr permutation importance: 7.2263

sltppt_m_sd1_1km_eu_ll permutation importance: 11.13

sndppt_m_sd1_1km_eu_ll permutation importance: 0.6911

solar_1km permutation importance: 1.3406

Training gain without bio_12_etrs2_ras: 1.315

Training gain without bio_15_etrs2_ras: 1.326

Training gain without bio_18_etrs2_ras: 1.3107

Training gain without bio_4_etrs2_ras: 1.2923

Training gain without bio_8_etrs2_ras: 1.3147

Training gain without bld_m_sd1_1km_eu_ll: 1.3269

Training gain without cecsum_m_sd1_1km_eu_ll: 1.3242

Training gain without clyppt_m_sd1_1km_eu_ll: 1.3277

Training gain without crfvol_m_sd1_1km_eu_ll: 1.3108

Training gain without dist2water1km: 1.3253

Training gain without orcdrc_m_sd1_1km_eu_ll: 1.325

Training gain without pet_he_yr: 1.3172

Training gain without sltppt_m_sd1_1km_eu_ll: 1.3217

Training gain without sndppt_m_sd1_1km_eu_ll: 1.33

Training gain without solar_1km: 1.3177

Training gain with only bio_12_etrs2_ras: 0.5502

Training gain with only bio_15_etrs2_ras: 0.2579

Training gain with only bio_18_etrs2_ras: 0.945

Training gain with only bio_4_etrs2_ras: 0.6296

Training gain with only bio_8_etrs2_ras: 0.2839

Training gain with only bld_m_sd1_1km_eu_ll: 0.7874

Training gain with only cecsum_m_sd1_1km_eu_ll: 0.7465

Training gain with only clyppt_m_sd1_1km_eu_ll: 0.2094

Training gain with only crfvol_m_sd1_1km_eu_ll: 0.7232

Training gain with only dist2water1km: 0.103

Training gain with only orcdrc_m_sd1_1km_eu_ll: 0.6591

Training gain with only pet_he_yr: 0.6047

Training gain with only sltppt_m_sd1_1km_eu_ll: 0.4062

Training gain with only sndppt_m_sd1_1km_eu_ll: 0.3865

Training gain with only solar_1km: 0.6498

Test gain without bio_12_etrs2_ras: 1.4832

Test gain without bio_15_etrs2_ras: 1.4958

Test gain without bio_18_etrs2_ras: 1.477

Test gain without bio_4_etrs2_ras: 1.5175

Test gain without bio_8_etrs2_ras: 1.4851

Test gain without bld_m_sd1_1km_eu_ll: 1.523

Test gain without cecsum_m_sd1_1km_eu_ll: 1.511

Test gain without clyppt_m_sd1_1km_eu_ll: 1.5106

Test gain without crfvol_m_sd1_1km_eu_ll: 1.4889

Test gain without dist2water1km: 1.4955

Test gain without orcdrc_m_sd1_1km_eu_ll: 1.5132

Test gain without pet_he_yr: 1.5072

Test gain without sltppt_m_sd1_1km_eu_ll: 1.5019

Test gain without sndppt_m_sd1_1km_eu_ll: 1.5138

Test gain without solar_1km: 1.521

Test gain with only bio_12_etrs2_ras: 0.6841

Test gain with only bio_15_etrs2_ras: 0.3615

Test gain with only bio_18_etrs2_ras: 1.0659

Test gain with only bio_4_etrs2_ras: 0.6307

Test gain with only bio_8_etrs2_ras: 0.3726

Test gain with only bld_m_sd1_1km_eu_ll: 0.8659

Test gain with only cecsum_m_sd1_1km_eu_ll: 0.7941

Test gain with only clyppt_m_sd1_1km_eu_ll: 0.2548

Test gain with only crfvol_m_sd1_1km_eu_ll: 0.8805

Test gain with only dist2water1km: 0.2401

Test gain with only orcdrc_m_sd1_1km_eu_ll: 0.7094

Test gain with only pet_he_yr: 0.6775

Test gain with only sltppt_m_sd1_1km_eu_ll: 0.4683

Test gain with only sndppt_m_sd1_1km_eu_ll: 0.4205

Test gain with only solar_1km: 0.802

AUC without bio_12_etrs2_ras: 0.9116

AUC without bio_15_etrs2_ras: 0.9146

AUC without bio_18_etrs2_ras: 0.9123

AUC without bio_4_etrs2_ras: 0.9165

AUC without bio_8_etrs2_ras: 0.9128

AUC without bld_m_sd1_1km_eu_ll: 0.9168

AUC without cecsum_m_sd1_1km_eu_ll: 0.9155

AUC without clyppt_m_sd1_1km_eu_ll: 0.9159

AUC without crfvol_m_sd1_1km_eu_ll: 0.9141

AUC without dist2water1km: 0.9148

AUC without orcdrc_m_sd1_1km_eu_ll: 0.9158

AUC without pet_he_yr: 0.9143

AUC without sltppt_m_sd1_1km_eu_ll: 0.9138

AUC without sndppt_m_sd1_1km_eu_ll: 0.9153

AUC without solar_1km: 0.9156

AUC with only bio_12_etrs2_ras: 0.8091

AUC with only bio_15_etrs2_ras: 0.7355

AUC with only bio_18_etrs2_ras: 0.8727

AUC with only bio_4_etrs2_ras: 0.7958

AUC with only bio_8_etrs2_ras: 0.7315

AUC with only bld_m_sd1_1km_eu_ll: 0.841

AUC with only cecsum_m_sd1_1km_eu_ll: 0.8275

AUC with only clyppt_m_sd1_1km_eu_ll: 0.6895

AUC with only crfvol_m_sd1_1km_eu_ll: 0.8461

AUC with only dist2water1km: 0.6871

AUC with only orcdrc_m_sd1_1km_eu_ll: 0.8133

AUC with only pet_he_yr: 0.8103

AUC with only sltppt_m_sd1_1km_eu_ll: 0.738

AUC with only sndppt_m_sd1_1km_eu_ll: 0.7247

AUC with only solar_1km: 0.8229

Entropy: 7.2763

Prevalence (average of logistic output over background sites): 0.1296

Fixed cumulative value 1 cumulative threshold: 1

Fixed cumulative value 1 logistic threshold: 0.034

Fixed cumulative value 1 area: 0.367

Fixed cumulative value 1 training omission: 0.0042

Fixed cumulative value 1 test omission: 0.0094

Fixed cumulative value 1 binomial probability: 8.71E-41

Fixed cumulative value 5 cumulative threshold: 5

Fixed cumulative value 5 logistic threshold: 0.1737

Fixed cumulative value 5 area: 0.2624

Fixed cumulative value 5 training omission: 0.0198

Fixed cumulative value 5 test omission: 0.0189

Fixed cumulative value 5 binomial probability: 8.86E-64

Fixed cumulative value 10 cumulative threshold: 10

Fixed cumulative value 10 logistic threshold: 0.2778

Fixed cumulative value 10 area: 0.218

Fixed cumulative value 10 training omission: 0.0605

Fixed cumulative value 10 test omission: 0.066

Fixed cumulative value 10 binomial probability: 0.00E+00

Minimum training presence cumulative threshold: 0.1331

Minimum training presence logistic threshold: 0.0029

Minimum training presence area: 0.5764

Minimum training presence training omission: 0

Minimum training presence test omission: 0.0094

Minimum training presence binomial probability: 3.07E-18

10 percentile training presence cumulative threshold: 14.8042

10 percentile training presence logistic threshold: 0.3391

10 percentile training presence area: 0.1894

10 percentile training presence training omission: 0.098

10 percentile training presence test omission: 0.1038

10 percentile training presence binomial probability: 0.00E+00

Equal training sensitivity and specificity cumulative threshold: 20.4419

Equal training sensitivity and specificity logistic threshold: 0.4021

Equal training sensitivity and specificity area: 0.1638

Equal training sensitivity and specificity training omission: 0.1637

Equal training sensitivity and specificity test omission: 0.1604

Equal training sensitivity and specificity binomial probability: 0.00E+00

Maximum training sensitivity plus specificity cumulative threshold: 11.9667

Maximum training sensitivity plus specificity logistic threshold: 0.3043

Maximum training sensitivity plus specificity area: 0.2052

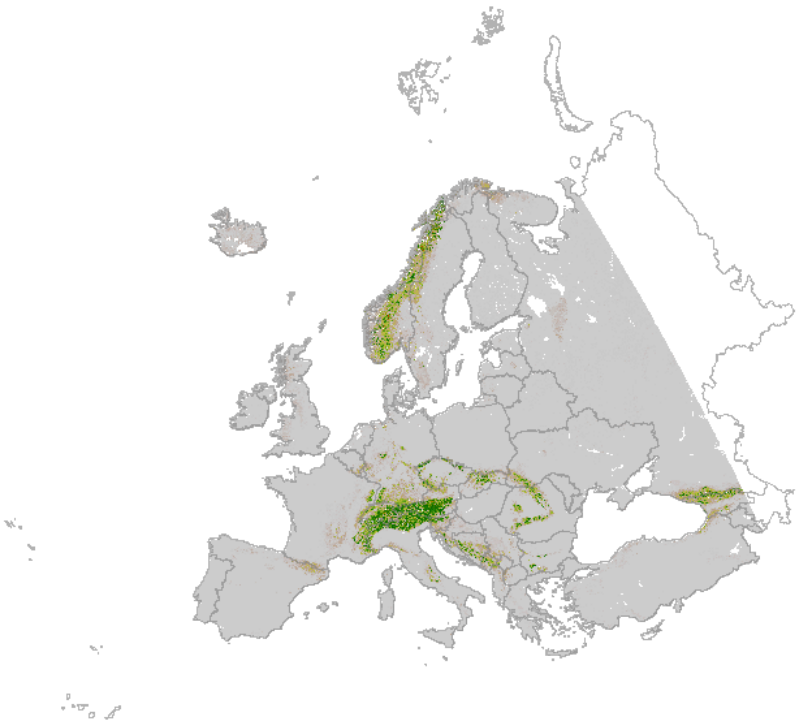
Maximum training sensitivity plus specificity training omission: 0.0657

	Maximum training sensitivity plus specificity test omission: 0.0755 Maximum training sensitivity plus specificity binomial probability: 0.00E+00 Equal test sensitivity and specificity cumulative threshold: 21.2496 Equal test sensitivity and specificity logistic threshold: 0.4111 Equal test sensitivity and specificity area: 0.1608 Equal test sensitivity and specificity training omission: 0.1741 Equal test sensitivity and specificity test omission: 0.1604 Equal test sensitivity and specificity binomial probability: 0.00E+00 Maximum test sensitivity plus specificity cumulative threshold: 9.9828 Maximum test sensitivity plus specificity logistic threshold: 0.2778 Maximum test sensitivity plus specificity area: 0.2182 Maximum test sensitivity plus specificity training omission: 0.0594 Maximum test sensitivity plus specificity test omission: 0.0472 Maximum test sensitivity plus specificity binomial probability: 0.00E+00 Balance training omission, predicted area and threshold value cumulative threshold: 2.1433 Balance training omission, predicted area and threshold value logistic threshold: 0.0811 Balance training omission, predicted area and threshold value area: 0.3151 Balance training omission, predicted area and threshold value training omission: 0.0052 Balance training omission, predicted area and threshold value test omission: 0.0094 Balance training omission, predicted area and threshold value binomial probability: 5.64E-51 Equate entropy of thresholded and original distributions cumulative threshold: 4.8118 Equate entropy of thresholded and original distributions logistic threshold: 0.1689 Equate entropy of thresholded and original distributions area: 0.265 Equate entropy of thresholded and original distributions training omission: 0.0188 Equate entropy of thresholded and original distributions test omission: 0.0189 Equate entropy of thresholded and original distributions binomial probability: 5.86E-63
Source	•

Metadata

File identifier	41b0dda2-f3ec-4a00-9628-ac9dc19182ba XML
Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2022-02-01T08:45:15.581Z
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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