EEA geospatial data catalogue

EUNIS habitat type B2.5, 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: Coastal sand dunes and sea shores according to Bohn map (P1)

Remarks: Inland prediction should be ignored. Hardly any prediction in large parts of the potential area.

Coastal habitats are difficult to model and often deliver unsatifying results. There are various reasons for this; 1) the area in which the habitat occurs is very small, 2) some observations do not match with all environmental layers and are therefore left out of the analysis, 3) lack of observations in large parts of the potential area.

Simple

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Edition	01
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Point of contact	**Organisation name** / **Individual name** / **Electronic mail address** / **Role** European Environment Agency / info@eea.eur info@eea.europa.eu / Point of contact European Environment Agency / info@eea.eur info@eea.europa.eu / Custodian

Point of contact

No information provided.

Maintenance and update frequency	Unknown
GEMET - INSPIRE themes, version 1.0	• Habitats and biotopes
GEMET	• natural area • tundra • coastal environment • heathland • terrestrial ecosystem
Keywords	

Keywords	
Place	• Europe
EEA topics	• Biodiversity
Use limitation	EEA standard re-use policy: unless otherwise indicated, re-use of content on the EEA website for commercial or non-commercial purposes is permitted free of charge, provided that the source is acknowledged (http://www.eea.europa.eu/legal/copyright). Copyright holder: European Environment Agency (EEA).
Access constraints	Other restrictions
Other constraints	no limitations to public access
Spatial representation type	Grid
Distance	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
CRS identifier	EPSG:3035
Distribution format	• GeoTIFF ( )

OnLine resource

No information provided.

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: 59 Regularized training gain: 3.5846 Unregularized training gain: 3.8402 Iterations: 500

Training AUC: 0.9905

#Test samples: 6

Test gain: 3.8198

Test AUC: 0.9929

AUC Standard Deviation: 0.0027

#Background points: 5059

bio_12_etrs2_ras contribution: 0

bio_15_etrs2_ras contribution: 4.0617

bio_18_etrs2_ras contribution: 0.1644

bio_4_etrs2_ras contribution: 34.3603

bio_8_etrs2_ras contribution: 0.47

bld_m_sd1_1km_eu_ll contribution: 5.0144

cecsum_m_sd1_1km_eu_ll contribution: 0.7953

clyppt_m_sd1_1km_eu_ll contribution: 0.7418

crfvol_m_sd1_1km_eu_ll contribution: 0.8194

dist2water1km contribution: 5.4668

orcdrc_m_sd1_1km_eu_ll contribution: 0.0484

pet_he_yr contribution: 9.6488

phihox_m_sd1_1km_eu_ll contribution: 2.2699

sltppt_m_sd1_1km_eu_ll contribution: 29.8844

sndppt_m_sd1_1km_eu_ll contribution: 5.8407

solar_1km contribution: 0.4136

bio_12_etrs2_ras permutation importance: 0

bio_15_etrs2_ras permutation importance: 4.0006

bio_18_etrs2_ras permutation importance: 0.0167

bio_4_etrs2_ras permutation importance: 63.0853

bio_8_etrs2_ras permutation importance: 0.121

bld_m_sd1_1km_eu_ll permutation importance: 1.1326

cecsum_m_sd1_1km_eu_ll permutation importance: 0.3588

clyppt_m_sd1_1km_eu_ll permutation importance: 0.8614

crfvol_m_sd1_1km_eu_ll permutation importance: 0.8281

dist2water1km permutation importance: 0.194

orcdrc_m_sd1_1km_eu_ll permutation importance: 0.0292

pet_he_yr permutation importance: 1.3996

phihox_m_sd1_1km_eu_ll permutation importance: 0.098

sltppt_m_sd1_1km_eu_ll permutation importance: 23.1442

sndppt_m_sd1_1km_eu_ll permutation importance: 0

solar_1km permutation importance: 4.7306

Entropy: 4.9448

Prevalence (average of logistic output over background sites): 0.0127

Fixed cumulative value 1 cumulative threshold: 1

Fixed cumulative value 1 logistic threshold: 0.0041

Fixed cumulative value 1 area: 0.1279

Fixed cumulative value 1 training omission: 0.0169

Fixed cumulative value 1 test omission: 0

Fixed cumulative value 1 binomial probability: 4.38E-06

Fixed cumulative value 5 cumulative threshold: 5

Fixed cumulative value 5 logistic threshold: 0.0404

Fixed cumulative value 5 area: 0.0466

Fixed cumulative value 5 training omission: 0.0339

Fixed cumulative value 5 test omission: 0

Fixed cumulative value 5 binomial probability: 1.03E-08

Fixed cumulative value 10 cumulative threshold: 10

Fixed cumulative value 10 logistic threshold: 0.1047

Fixed cumulative value 10 area: 0.0273

Fixed cumulative value 10 training omission: 0.0508

Fixed cumulative value 10 test omission: 0

Fixed cumulative value 10 binomial probability: 4.12E-10

Minimum training presence cumulative threshold: 0.9716

Minimum training presence logistic threshold: 0.0039

Minimum training presence area: 0.1297

Minimum training presence training omission: 0

Minimum training presence test omission: 0

Minimum training presence binomial probability: 4.75E-06

10 percentile training presence cumulative threshold: 20.4413

10 percentile training presence logistic threshold: 0.2916

10 percentile training presence area: 0.013

10 percentile training presence training omission: 0.0847

10 percentile training presence test omission: 0.1667

10 percentile training presence binomial probability: 2.24E-09

Equal training sensitivity and specificity cumulative threshold: 5.6343

Equal training sensitivity and specificity logistic threshold: 0.0461

Equal training sensitivity and specificity area: 0.0429

Equal training sensitivity and specificity training omission: 0.0508

Equal training sensitivity and specificity test omission: 0

Equal training sensitivity and specificity binomial probability: 6.23E-09

Maximum training sensitivity plus specificity cumulative threshold: 4.932

Maximum training sensitivity plus specificity logistic threshold: 0.0394

Maximum training sensitivity plus specificity area: 0.047

Maximum training sensitivity plus specificity training omission: 0.0169

Maximum training sensitivity plus specificity test omission: 0

Maximum training sensitivity plus specificity binomial probability: 1.08E-08

Equal test sensitivity and specificity cumulative threshold: 14.7808

Equal test sensitivity and specificity logistic threshold: 0.1683

Equal test sensitivity and specificity area: 0.0188

	Equal test sensitivity and specificity training omission: 0.0678 Equal test sensitivity and specificity test omission: 0 Equal test sensitivity and specificity binomial probability: 4.39E-11 Maximum test sensitivity plus specificity cumulative threshold: 14.7808 Maximum test sensitivity plus specificity logistic threshold: 0.1683 Maximum test sensitivity plus specificity area: 0.0188 Maximum test sensitivity plus specificity training omission: 0.0678 Maximum test sensitivity plus specificity test omission: 0 Maximum test sensitivity plus specificity binomial probability: 4.39E-11 Balance training omission, predicted area and threshold value cumulative threshold: 0.9716 Balance training omission, predicted area and threshold value logistic threshold: 0.0039 Balance training omission, predicted area and threshold value area: 0.1297 Balance training omission, predicted area and threshold value training omission: 0 Balance training omission, predicted area and threshold value test omission: 0 Balance training omission, predicted area and threshold value binomial probability: 4.75E-06 Equate entropy of thresholded and original distributions cumulative threshold: 9.882 Equate entropy of thresholded and original distributions logistic threshold: 0.1032 Equate entropy of thresholded and original distributions area: 0.0277 Equate entropy of thresholded and original distributions training omission: 0.0508 Equate entropy of thresholded and original distributions test omission: 0 Equate entropy of thresholded and original distributions binomial probability: 4.49E-10
Source	• EUNIS habitat type B2-5 distribution based on vegetation plot data - version 1, June 2016

Metadata

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Overviews

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