

**European Common database on Nationally Designated
Areas (National – CDDA)
2009 – Quality assessment**

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Activity 1.3.2 B

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The European Topic Centre on Biological Diversity (ETC/BD) is a consortium of nine organisations under a Framework Partnership Agreement with the European Environment Agency

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1. Delivery of datasets

Not relevant for public view

2. Description of the QA/QC

2.1 Introduction

The European Common Database on Designated Areas (ECDDA) covers the entire geographical area of Europe including the full geographical area under the responsibility of European countries as well as other States and Territories related to key initiatives in the European region¹. Effectively this covers EEA member countries, EEA collaborating countries, and Council of Europe (CoE) states which are not collaborating countries of the EEA (EECCA² and Andorra). The resulting data stretches across Europe/Eurasia from the western tip of Iceland to the most easterly point of the Russian Federation as well as Greenland (Denmark) and the French Overseas Departments and Territories³ and Overseas Collectives⁴ (figure 1 and figure 2).

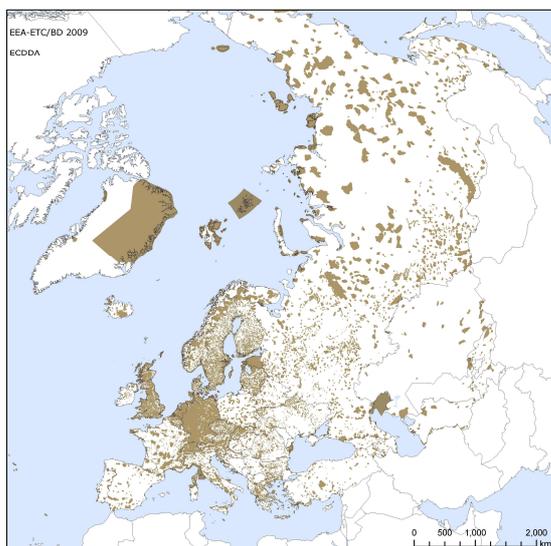


Figure 1: Extent of the ECDDA dataset

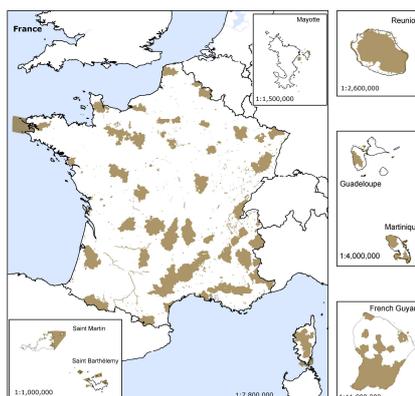


Figure 2: France (metropolitan, Dom-TOM, COM)

¹ Memorandum of Cooperation between the EEA and the United Nations environment Programme–World Conservation Monitoring Centre (UNEP-WCMC) (2007).

² Eastern Europe, Caucasus and Central Asia (EECCA).

³ The *département d'outre-mer et territoires d'outre-mer s* (DOM-TOM) of Martinique, Guadeloupe, French Guyana and Reunion (Article 2 point 287 (b) of the Lisbon Treaty)

⁴ The *collectivités d'outre-mer* (COM) of Saint Martin (MAF), Saint Barthelemy (BLM) (these islands were formerly part of Guadeloupe but seceded to form a COM –Feb 22 2007) and the planned COM of Mayotte (MYT) (on March 29 2009 the island voted to become a COM from 2011).

In 2009; 33 countries delivered descriptive data (figure 3, Appendix 1), 28⁵ of these additionally delivered spatial data (figure 4, Appendix 2). These datasets were subjected to a series of quality control and quality assurance (QA/AC) checks.

Once the data passed these tests it was combined with data for those countries that did not submit data in 2009 which were extracted from a number of sources (see table 5); data for the EEA and EEA collaborating countries were extracted from the previous CDDA version (Ver. 7.5, SitesEUR_08) with spatial boundaries for Spain from the 2008 country submission, for the EECCA countries and Andorra (CoE country) the data were extracted from the 2009 World Database of Protected Areas (WDPA) release.

The combined and integrated dataset that is the 2009 ECDDA covers 52 countries, and consist of a total of 108 962 records in the database and 102 265 spatial records (see Appendix 3 for more details). The various data sources used to create the composite dataset will be discussed in the Results section.

There still remain a number of restrictions on the dissemination of the ECDDA data from countries; these will be further discussed in the Results section (section 4).

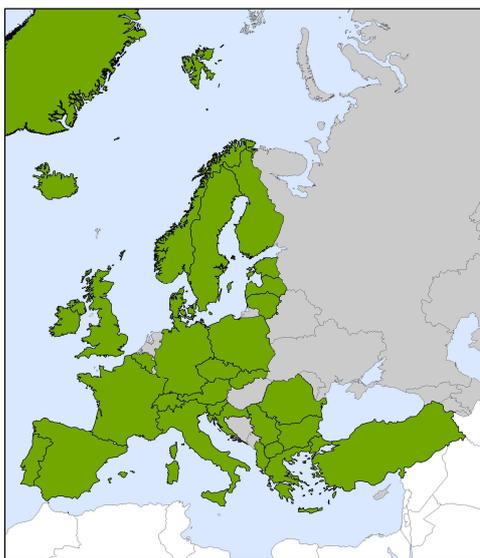


Figure 3: Countries that delivered descriptive data.

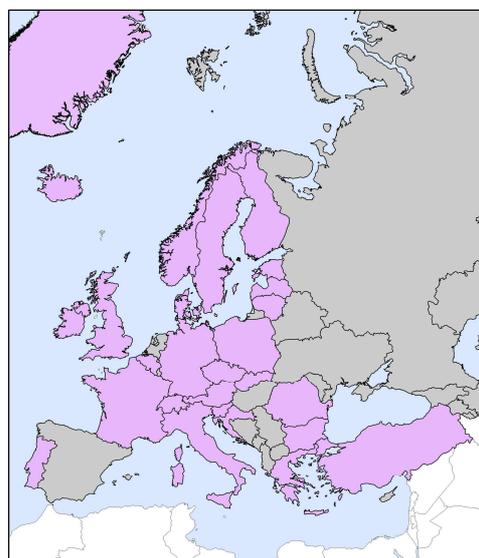


Figure 4: Countries that delivered spatial data.

Table 1. Breaks down the spatial data into each feature class. The data is a composite of 2009 deliveries and WDPA 2009 boundaries- this will be further discussed in the results section.

Feature class	Number
Polygon	82 260
Point	19 368
Polyline	190

⁵ Albania, Cyprus, FYROM, Spain and Serbia only delivered descriptive data. The Cypriot data covers the area of Cyprus where the Community acquis applies at present according to protocol 10 of the Accession Treaty of Cyprus –http://eur-lex.europa.eu/pri/en/oj/dat/2003/l_236/l_23620030923en09310956.pdf#page=25

2.1 Main Issues

The majority of the data passed the QA/QC tests and was of a good quality, however there were a small number of countries where there were issues regarding the data. These will be discussed in the following sections

Germany

The German data was of a high quality and the only issue arose from the data from the Federal State (Land) of Saarland. The spatial data for 183 sites for this Federal State do not contain any sitecode or an identifier, so it could not be linked to the descriptive data. Therefore it could not be included in the overall ECDDA dataset. The ETC/BD contacted the German NFP (The Bundesamt für Naturschutz, BfN) in order to discuss this issue. BfN is aware of this problem, but due to the federal structure and the distributed responsibilities they have to further discuss this with the authorities in the Saarland in order to solve the issue for the next phase.

Spain

Spain only supplied a descriptive dataset in 2009. We were unable to extract boundaries for Spain from the previous version of the ECDDA (ver 7.5⁶) as the Spanish data was not included in this version. When the original data as supplied by Spain (April 2008) was checked the boundaries were present in the countries delivery and we were able to, after running the QA/QC process, join the descriptive data to the spatial data.

Portugal

Portugal submitted 11 shapefiles in 3 projections. There was no global unique identifier used in the shapefiles, unique identifiers used included SITECODE, name, local ID which were not always possible to match automatically to the descriptive data- the islands archipelagos of the Azores and Madeira contained the majority of these cases. For those sites where it was not possible to match automatically it was necessary to manually do so. It was possible to match all bar **one site** –a large site in excess of 27 000 ha on Madeira Island with the classification of “Zona de Transicao” (figure 5).

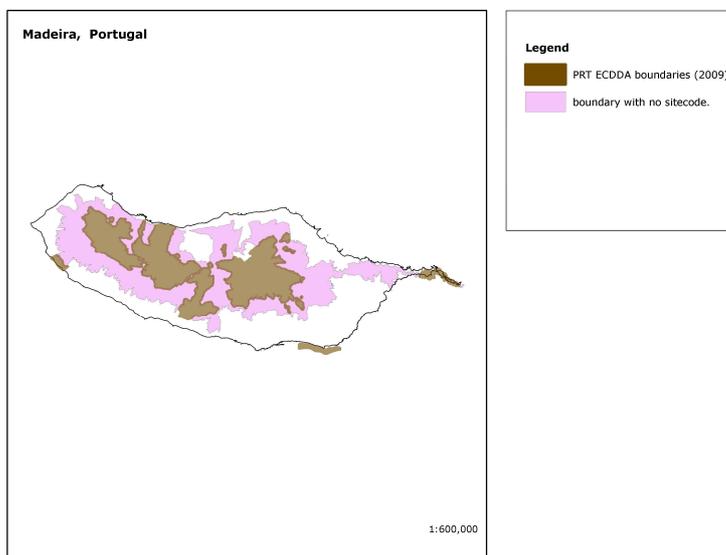


Figure 5: Map of Madeira Island showing the extent of the site that could not be matched to the descriptive database.

⁶ From the shapefile of the previous version of ECDDA “SitesEUR_08.shp”

Serbia

Since the last ECDDA database (ver 7.5) Serbia changed the sitecodes of a number of sites. After consultation with the NFP Serbia the ETC/BD could solve the problem. Boundaries were taken from the previous version of the ECDDA.

Table 2

SITECODE	Version	NAME	Desig	IUCN	Area (ha)	Year
328930	7.5	Spomen suma u Kustilju	RS05	UA	2	1973
328877	8	Spomen suma u Kustilju	RS05	UA	2	1973
145144	7.5	Ribnica	RS03	III	28	1977
328930	8	Ribnica	RS03	III	28	1976
145144	8	Kukavica	RS02	UA	78	1978
328900	7.5	Busan kamen	RS03	UA	0	1978
328930	8	Busan kamen	RS03	UA	0	1978
328900	8	Risovaca	RS03	III	13	1954
145142	7.5	Risovaca	RS03	III	13	1954
145142	8	Jaresnik	RS02	UA	3	1961
328844	7.5	Jaresnik	RS02	UA	3	1961
Etc.....						

16406 now Uvac **was** Klisura reke Uvac.

328886 now Bjeluska potajnica **was** Kraski izvor Potajnica.

Turkey

The principal issue with the Turkish data concerns the difficulty in linking the spatial data to the descriptive data.

The ETC/BD did contact the NFP Turkey, but did not receive any reply.

The unique identifier in the spatial data supplied by Turkey is the site name (MAP_ADI, Bolge_adi, TA_ADI, TKA_ADI, TP_ADI, SAHA_ADI). In this field the site names are a combination of uppercase and lowercase, contain Turkish diacritical characters, underscores and abbreviations of the designation type at the end of the name e.g. _TKA, _MP. By contrast in the CDDA database the "Site name" format consists of; the first letter of each word is upper case with the following letters being lower case, hyphenations, parentheses, some different characters (often lower case versions of the upper case diacritical characters) and the designation types are not at the end of the site name.

Given the differences in the format of the site name fields in both datasets it was not possible to automatically link the data. In order to link the data it was necessary to manually link the datasets and compare the name in the shapefile to the name in the database and similarly with the area and the coordinates of the sites were supplied. Using this technique it was possible to match the vast majority of sites but there were number sites where it was not possible (5 sites Table 3) for a number of other sites a number of issues arose, primarily due to the fact that the names varied especially for multi polygon features (Table 4).

In future the “SITECODE” should be used as the unique identifier or failing that same name (characters etc) should be used in the spatial data as the descriptive data as the unique identifier.

Table 3. The five Turkish sites that could not be incorporated into the ECDDA spatial dataset for 2009.

GIS_ Site name	GIS Area (ha)	Access site name ?	Area (ha)	Sitecode ?	Comment
AĐRIDAĐI_MP_2	177	Part of Agri Dagi, 348535 ?	173		1 polygon or are the 3 polygons part of the site ?
AĐRIDAĐI_MP_3	34	Part of Agri Dagi, 348535 ?	33		1 polygon or are the 3 polygons part of the site ?
KAĐKAR DADLARI_MP	52973	No corresponding record			
BOGAZKÖY_ALACHÖYÜK_MP	2601				
GÜMELY_TA	249				

Table 4. Turkish sites that require clarification from Turkey, these were incorporated into the ECDDA 2009 dataset.

GIS_ Site name	GIS Area (ha)	Access site name ?	Area (ha)	Sitecode ?	Comment
AĐRIDAĐI_MP_1	89853	Agri Dagi	87380	348535	1 polygon or are the 3 polygons part of the site ?
TEKKOZ_KENGERLYDÜZ_TKA_1	116	Tekkoz_Kengerlidüz	172	40658	Site consists of 2 polygons ?.
TEKKOZ_KENGERLYDÜZ_TKA_2	66	Tekkoz_Kengerlidüz	172	40658	Site consists of 2 polygons ?.
AKDOGAN VE RÜZGARLAR EBEĐAMI_TKA_1	100	Akdogan ve Ruzgarlar Ebe Cami	174	12746	Site consists of 2 polygons ?.
AKDOGAN VE RÜZGARLAR EBEĐAMI_TKA_2	93	Akdogan ve Ruzgarlar Ebe Cami	174	12746	Site consists of 2 polygons ?.
BAPKOMUTAN_TMP_DUMLUPINAR KESÝMY	19537	Baskomutanlik Tarihi Milli Parki	39503	4057	Site consists of 2 polygons ?.
BAPKOMUTAN_TMP_KOCATEPE KESÝMY	19966	Baskomutanlik Tarihi Milli Parki	39503	4057	Site consists of 2 polygons ?.
VAKIF ÇAMLIDİ_TKA_1	559	Vakif Camligi	690	39913	Site consists of 2 polygons ?.
VAKIF ÇAMLIDİ_TKA_2	131	Vakif Camligi	690	39913	Site consists of 2 polygons ?.
Erzurm Oltu YHGS	62447	Erzurum-Ispir-Vercenik Dagi	62447	61988	Site incorrectly labelled in original data as Erzurm Oltu, it corresponds to information matching Erzurum-Ispir-Vercenik Dagi (see map)

GIS_ Site name	GIS Area (ha)	Access site name ?	Area (ha)	Sitecode ?	Comment
Erzurum Çat YHGS	4976	Erzurum-Oltu	4976	62003	Site incorrectly labelled in original data as Erzurum Çat, it corresponds to information matching Erzurum-Oltu (see map)
Erzurum Ýspir Vercenik Dađý YHGS	62889	Erzurum-Cat	62559	197342	Site incorrectly labelled in original data as Erzurum Ýspir Vercenik Dađý, it corresponds to information matching Erzurum-Cat (see map)
Eskişehir Mihallýçýk Çatacýk YHGS	26659	Eskişehir-Michaliccik-Alpu-Merkez ve Sarıcakaya	26659	197344	Same site?
CITDERE_TKA_1	354	Citdere	731	40663	Site consists of 2 polygons ?.
CITDERE_TKA_2	377	Citdere	731	40663	Site consists of 2 polygons ?.
HONAZ DAĐI_MP_1	9095	Honaz Dagi	9427	169029	Site consists of 2 polygons ?.
HONAZ DAĐI_MP_2	332	Honaz Dagi	9427	169029	Site consists of 2 polygons ?.
IGNEADA LONGOZ ORMANLARI_MP_1	552	Igneada Longoz Ormanlari	3157	348640	Site consists of 2 polygons ?.
IGNEADA LONGOZ ORMANLARI_MP_2	2605	Igneada Longoz Ormanlari	3157	348640	Site consists of 2 polygons ?.
KAZDAĐI GOKNARI_TKA_1	130	Kazdagi Goknari	254	39914	Site consists of 2 polygons ?.
KAZDAĐI GOKNARI_TKA_2	124	Kazdagi Goknari	254	39914	Site consists of 2 polygons ?.

For 3 sites within the Erzurum province (Erzurum Oltu , Erzurum Çat , Erzurum Ýspir Vercenik Dađý) the name and area of the site within the shapefile are at odds with its geographical location and its area in the descriptive database (figure 6).



Figure 6: This figure highlights the three sites with a questionable naming and highlights what should be the correct names.

United Kingdom

Two files submitted by the UK could not be opened due to the error the “number of shapes does not match the number of table records”

- UK01_NNR_NI
- UK85_AONB_England

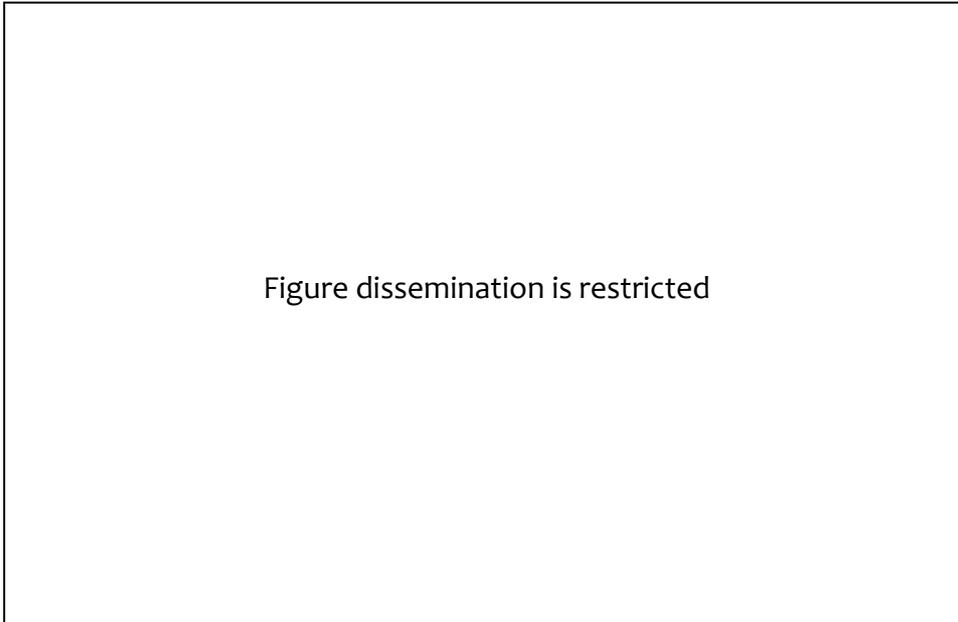


Figure 7: UK98_ASSI_NI is incorrectly located over Northern Wales. It is not included in the 2009 ECDDA report.

For one other UK file (UK98_ASSI_NI.shp) the projection parameters were wrongly assigned, the data which should be located in Northern Ireland and when the file is opened up it is located over Northern Wales (figure 7).

The Joint Nature Conservation Committee (JNCC) has been notified of these issues. As they have to receive the data from various agencies within the UK, they were not in the position to resubmit the corrected data this year.

2.3 Spatial Validation

The 28 countries that submitted spatial data did so in the form of shapefiles, personal geodatabases or in one case a mapinfo file. All the data from these countries was converted to the shapefile format⁷ and subjected to a series of spatial QA/QC checks.

The spatial validation consisted of the following stages:

- 2.3.1 Projection validation
- 2.3.2 Geometry validation
 - 2.3.2.1 Geometry must be valid if not Repair geometry.
 - 2.3.2.2 Multipart polygons must not be present, if so “Dissolve”
- 2.3.3 Geographical and Attribute validation
 - 2.3.3.1 Data must lie within the country extent (terrestrial + marine).
 - 2.3.3.2 Check if coordinates in the database are within the country.
 - 2.3.3.3. Attribute validation, check that each feature has a sitecode, if not link by another field, if not possible check site name and try to link using site name, grid coordinates, area
 - 2.3.3.4 Calculate coordinates for each polygon and compare them to the coordinates as supplied by country.
 - 2.3.3.5 Comparison of the Area, area calculated using GIS and compared to that supplied by the Member State.

2.3.1 Projection validation

All data were checked to ensure they add a projection file. All files passed this first step. The Table in Appendix 6 details the native projection or projections of the data. All the data were transformed to ETRS LAEA 5210 to incorporate them into a European wide projection system. The data was also transformed to WGS 84.

2.3.2 Geometry validation

2.3.2.1 Geometry must be valid

The rule for this check was that the geometry must be valid. The geometry of all the files was checked using the ‘Check Geometry’ Tool in Arc GIS 9.2. Where this QA/QC identified errors the ‘Repair Geometry’ Tool was run in order to repair them. Common geometrical issues were self intersections or incorrect ring ordering.

2.3.2.2 Multipart polygons must not be present:

The rule for this check was that multipart polygons must not be present. After the geometry had been validated all the files were dissolved using the ‘Dissolve’ command in Arc GIS 9.2. All features were aggregated based on the unique identifier.

⁷ This rationale for doing this was that personal geodatabases are often version specific and in having the data as shapefiles they bypass this issue. In future following discussion between the ETC/BD, EEA and WCMC the data may ultimately be delivered as personal geodatabases. They do offer a number of advantages for geoprocessing.

2.3.3 Geographical and attribute validation:

2.3.3.1 Data must lie within the member State extent:

The rule for this test was that all data should lie within the terrestrial and marine extent of the country. Due to the differences in the borders of countries between what they have available nationally and what is available at the European level a buffer of 5km was created around the country boundaries and the Marine extents⁸. All the data passed this test.

2.3.3.2 Check if coordinates are within the Member State:

The descriptive database contains two fields (LAT, LON) that are used by countries to add coordinate information to the sites. The coordinates as supplied by the countries were converted to a point and a projection (WGS 84) added to the points. The location of these points was checked against the extents of the countries. A small number of sites occurred outside the country extent (Appendix 7) the principal cause of these 'errors' was the latitude and longitude being switched. Where this occurred the coordinates were corrected in a separate field and the test run again. Only Poland (17 sites), Albania (4 sites), Cyprus (2 sites) and Serbia (1 site) had incorrect coordinates. In the final delivery these corrected coordinates were, however, kept only in case that reporting country has requested that the coordinates be calculated by EEA. In remaining cases the coordinates were replaced with values reported by countries.

A number of countries did not supply coordinates for their site, instead they asked that the coordinates be calculated automatically where spatial datasets were provided⁹. The centroid of the polygon was generated so that it would lie inside the polygon feature using the 'Feature to Point' tool in Arc GIS 9.2.

2.3.3.3 Attribute validation:

All spatial features were checked against the descriptive data to ensure that a unique identifier within the spatial data could be linked to the descriptive data and ultimately to the sitecode. All countries had unique identifiers in the spatial data that could be linked to the descriptive data base (version 8) and the sitecode filled, except for the cases mentioned in section 2.

2.3.3.4 Calculate coordinates for each polygon and compare them to the coordinates as supplied by country.

The centroid of the polygon was calculated to lie within the polygon. The location of this centroid was compared with the latitude and longitude as described in the descriptive database, where it exists. Four situations were distinguished, where the differences is >1km, >10km, >50km and >100km (Appendix 8 shows a table giving the number of sites per country that fall into these classes).

2.3.3.5 Comparison of the Area: GIS calculated area compared to that supplied by the Member State

The area of the polygons for each site was calculated and compared to the areas in the descriptive database for the same site, where the area was given. Three situations were identified, where the difference was >5%, >10% or >50% (Appendix 9 shows a table giving the number of sites per country that fall into these classes).

⁸ The boundaries used were generated during the Article 17 process and consist of the National GeoSpatial Agency (NGA) coastline data (global shoreline data, satellite derived high water line data) supplemented by EU Member State data were supplied, the internal boundaries are based on EEA supplied Euroboundary map data, the marine extents are based on the EEZ obtained from the VLIZ (<http://www.vliz.be/En/INTRO>) which are based on the Un law o f the Sea.

⁹ These countries denoted this by filling in the value "02" in the filed CDDA_Coordinate_Code in the sites table or via correspondence stating that they wanted the coordinates to be calucted., see Appendix 9

2.4. Results

Once the data from the 28 EEA and EEA collaborating countries that delivered in 2009 underwent the QA/QC procedures it was merged into a single polygon, point and polyline feature. The data for those countries that did not submit spatial data in 2009 were extracted from a number of sources (see table 5); spatial boundaries for the EEA and EEA collaborating countries were extracted from the previous CDDA version (SitesEUR_08) and for Spain from the 2008 country submission, for the EECCA countries and Andorra (CoE country) the spatial boundaries were extracted from the 2009 WDPA release.

Table 5. The various combinations of data sources used to make up the 2009 ECCDA data set. Ver. 8 is the 2009 delivery; ver. 7.5 is the 2008 delivery, SitesEUR_08 is the 2008 spatial dataset (<http://dataservice.eea.europa.eu/dataservice/metadetails.asp?id=1047>), WDPA refers to the WDPA 2009 delivery, for 5 the Spanish 2008 delivery was used;

Datasource Code	Descriptive data	Spatial Data
1	Ver. 8	2009 delivery
2	Ver. 8	SitesEUR_08
3	Ver 7.5	SitesEUR_08
4	WDPA	WDPA
5	Ver.8	Spain 2008 delivery

The previous ECDDA boundaries (SitesEUR_08) were not subjected to a set of QA/QC procedures as this was done last year, similarly the WDPA data were not subjected to a set of QA/AC procedures as it has already been subjected to similar queries by the WCMC. The spatial QA/AC process run by the ETC/BD in 2009 took into account the processes outlined in the documentation of the WDPA validation tool in order to improve coordination between EEA/ETC_BD and WCMC and reduce duplication of work.

The data structure of the WDPA differs from the ver.8 ECDDA data structure. The following table (Table 6) shows the matrix of conversion between the field names from WDPA to ECDDA.

Table 6. Table highlighting the cross-linking of data structure between WDPA data and ECDDA data.

WDPA	ECDDA
SITE_ID	SITE_CODE
SITE_ID	SITE_CODE_NAT
ISO3	PARENT_ISO
ISO3	ISO3
DESIG_ENG	DESIG_ABBR
NAME_ENG	SITE_NAME
DOC_AREA	SITE_AREA
IUCNCAT	IUCNCAT
STATUS	YEAR
LAT_DD	LAT
LON_DD	LON

The 2009 ECDDA data set covers 52 countries (Appendix 3) with 108 962 records in the database and 101 549 spatial records. As mentioned previously there are still a number of restrictions on the dissemination of the data. Table 7 highlights the 6 options for data dissemination; this table is extracted from the CDDA Data Dictionary. This field is included in the attributes of the shapefiles as the field 'CDDA_Dissem'

Table 7. Dissemination instruction code (CDDA Data dictionary, EEA).

Value	Definition
00	Use dissemination instructions provided in metadata for the spatial dataset.
01	Vector data can be published for this feature
02	Public dissemination restricted to presence/absence in European raster dataset.
03	Public dissemination restricted to European scale maps
04	Dissemination to CDDA partner institutions (WCMC and CoE) for their internal use only. Other interested parties should contact national representative.
05	No dissemination by EEA. Interested parties should contact national representative.

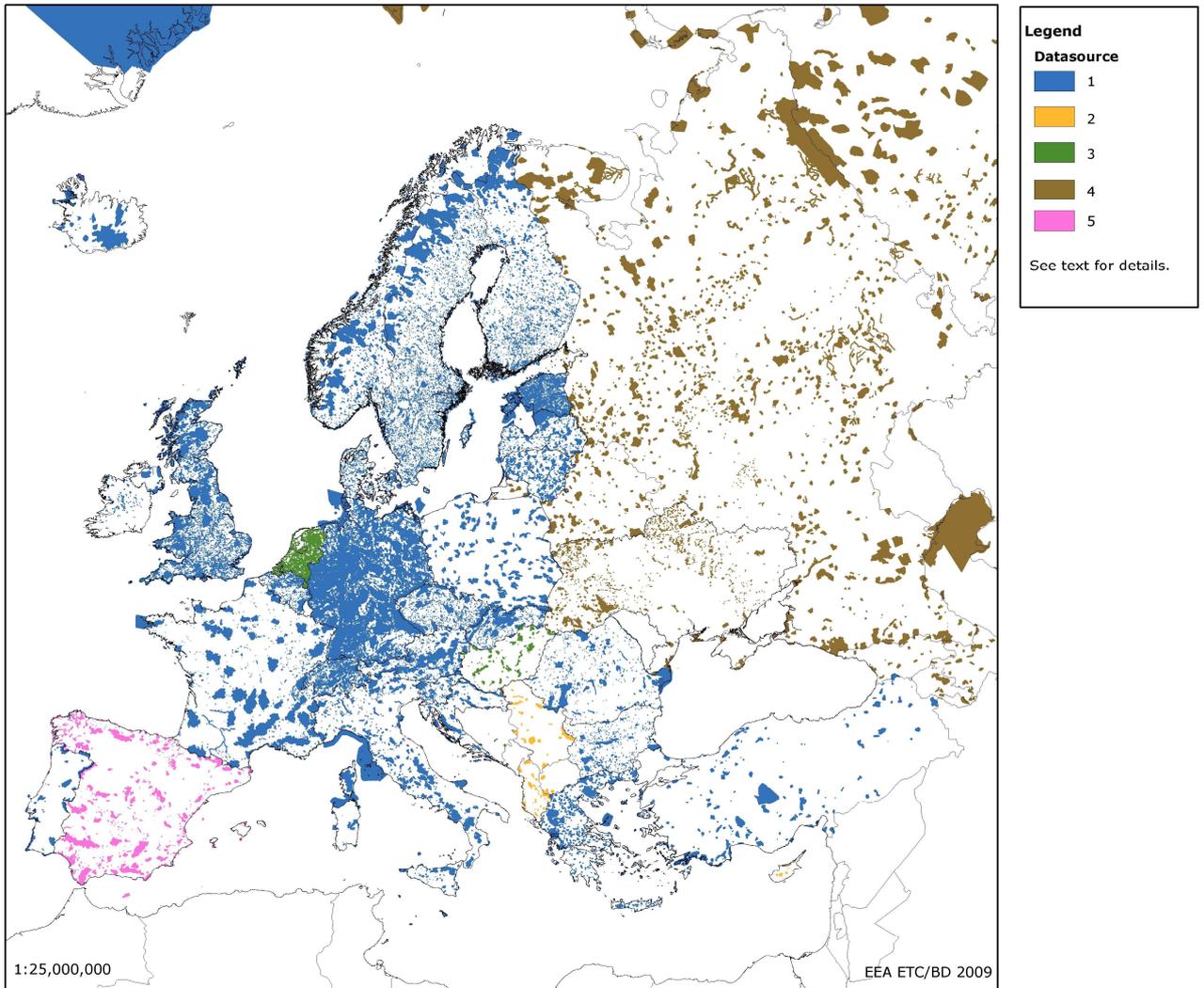


Figure 8: Showing the location of the countries that fall under the 5 different data source codes.

3. Concluding remarks

Not relevant for public view

Appendix 1

Table listing which countries delivered descriptive data in 2009.

Country	ISO3
Albania	ALB
Austria	AUT
Belgium	BEL
Bulgaria	BGR
Croatia	HRV
Cyprus	CYP
Czech Republic	CZE
Denmark	DNK
Estonia	EST
Finland	FIN
France	FRA
FYROM	MKD
Germany	DEU
Greece	GRC
Iceland	ISL
Ireland	IRL
Italy	ITA
Latvia	LVA
Liechtenstein	LIE
Lithuania	LTU
Malta	MLT
Norway	NOR
Poland	POL
Portugal	PRT
Romania	ROM
Serbia	RS
Slovakia	SVK
Slovenia	SVN
Spain	ESP
Sweden	SWE
Switzerland	CHE
Turkey	TUR
United Kingdom	GBR

Appendix 2

Table listing which countries delivered spatial data in 2009.

Country	ISO3
Austria	AUT
Belgium	BEL
Bulgaria	BGR
Croatia	HRV
Czech Republic	CZE
Denmark	DNK
Estonia	EST
Finland	FIN
France	FRA
Germany	DEU
Greece	GRC
Iceland	ISL
Ireland	IRL
Italy	ITA
Latvia	LVA
Liechtenstein	LIE
Lithuania	LTU
Malta	MLT
Norway	NOR
Poland	POL
Portugal	PRT
Romania	ROM
Slovakia	SVK
Slovenia	SVN
Sweden	SWE
Switzerland	CHE
Turkey	TUR
United Kingdom	GBR

Appendix 3

Table listing which countries make up the 2009 ECDDA and the number of records in the descriptive database and spatial data.

Country	ISO3	Responsibility	No. of records in database	No. of records in GIS	Datasource Code
Albania	ALB	EEA	801	76	2
Andorra	AND	WCMC	7	4	4
Armenia	ARM	WCMC	40	12	4
Austria	AUT	EEA	1219	1111	1
Azerbaijan	AZE	WCMC	73	38	4
Belarus	BLR	WCMC	451	451	4
Belgium	BEL	EEA	1991	881	1
Bosnia - Herzegovina	BIH	EEA	156	34	3
Bulgaria	BGR	EEA	991	950	1
Croatia	HRV	EEA	462	461	1
Cyprus	CYP	EEA	45	41	2
Czech Republic	CZE	EEA	2243	2231	1
Denmark	DNK	EEA	2137	2172	1
Estonia	EST	EEA	14405	14325	1
Finland	FIN	EEA	7610	7610	1
France	FRA	EEA	1769	1744	1
FYROM	MKD	EEA	74	62	2
Georgia	GEO	WCMC	63	36	4
Germany	DEU	EEA	15349	15220	1
Greece	GRC	EEA	810	810	1
Hungary	HUN	EEA	250	162	3
Iceland	ISL	EEA	99	96	1
Ireland	IRL	EEA	309	155	1
Italy	ITA	EEA	772	746	1
Kazakhstan	KAZ	WCMC	100	100	4
Kyrgyzstan	KGZ	WCMC	33	33	4
Latvia	LVA	EEA	697	663	1
Liechtenstein	LIE	EEA	40	40	1
Lithuania	LTU	EEA	328	321	1
Luxembourg	LUX	EEA	97	183	3
Malta	MLT	EEA	178	178	1
Moldova	MDA	WCMC	66	66	4
Monaco	MCO	EEA	2	1	4
Montenegro	MNE	EEA	37	8	4
Netherlands	NLD	EEA	1986	1954	3
Norway	NOR	EEA	2614	2539	1
Poland	POL	EEA	2058	141	1
Portugal	PRT	EEA	176	168	1
Romania	ROU	EEA	996	844	1

Country	ISO3	Responsibility	No. of records in database	No. of records in GIS	Datasource Code
Russia	RUS	WCMC	11343	11343	4
Serbia	SRB	EEA	335	25	2
Slovakia	SVK	EEA	1132	1115	1
Slovenia	SVN	EEA	1377	1372	1
Spain	ESP	EEA	1509	941	5
Sweden	SWE	EEA	11758	11758	1
Switzerland	CHE	EEA	13259	3146	1
Tajikistan	TJK	WCMC	23	23	4
Turkey	TUR	EEA	2477	195	1
Turkmenistan	TKM	WCMC	32	32	4
Ukraine	UKR	WCMC	5198	5198	4
United Kingdom	GBR	EEA	8801	8463	1
Uzbekistan	UZB	WCMC	17	17	4
Total			108692	102265	

Appendix 4

Table of the projection supplied by the Member States

Country	ISO3	Format	Projection
Austria	AUT	Shapefile	LAM_CC_4730_AUT (GCS MSI)
Belgium	BEL	Shapefile	Belge_Lambert_1972
Bulgaria	BGR	Shapefile	WGS_1984_UTM_Zone_35N
Croatia	HRV	Shapefile	HR_GK_5
Czech Republic	CZE	Shapefile	S-JTSK_Krovak_East_North
Denmark	DNK	MapInfo	_MI_0
Denmark Greenland	GRL	MapInfo	WGS_1984
Estonia	EST	Shapefile	Estonia_1997_Estonia_National_Grid
Finland	FIN	Shapefile	GCS_WGS_1984
France (metropolitan)	FRA	Shapefile	ETRS_1989_LAEA
Germany	DEU	Shapefile	DHDN_3_Degree_Gauss_Zone_3
Greece	GRC	Shapefile	Greek Grid
Iceland	ISL	Shapefile	ISN_1993_Lambert_1993
Ireland	IRL	Shapefile	ETRS_1989_LAEA
Italy	ITA	Shapefile	WGS_1984_UTM_Zone_32N
Latvia	LVA	Shapefile	ETRS89-LAEA5210
Liechtenstein	LIE	Personal geodatabase	ETRS_1989_LAEA_L52_M10
Lithuania	LTU	Personal geodatabase	Lietuvos_Koordinaciu_Sistema
Malta	MLT	Shapefile	WGS_1984_UTM_Zone_33N
Norway	NOR	Shapefile	WGS_1984_UTM_Zone_33N
Poland	POL	Shapefile	PUWG-92
Portugal	PRT	Shapefile	WGS84, Lisboa_Hayford_Gauss_IGeoE, Porto_Santo_1936_UTM_Zone_28N
Romania	ROM	Shapefile	Stereo_70
Slovakia	SVK	Shapefile	S-JTSK_Krovak_East_North
Slovenia	SVN	Personal geodatabase	gauss_krueger_SLO
Sweden	SWE	Shapefile	GCS_WGS_1984
Switzerland	CHE	Personal geodatabase	CH1903_LV03
Turkey	TUR	Shapefile	Lambert_Conformal_Conic
United Kingdom	GBR	Shapefile	British National grid

France, DOM-TOM, COM			
Guadeloupe*	GLP	Shapefile	Sainte_Anne_UTM_Zone_20N
Martinique	MTQ	Shapefile	Fort_Dessaix_UTM_Zone_20N
French Guyana	GUF	Shapefile	CSG67_UTM_Zone_22N
Réunion	REU	Shapefile	Gauss_Laborde_Réunion
Mayotte	MYT	Shapefile	IGN50_UTM_Zone_38S

*The data for Guadeloupe includes that for the COM's of Saint Martin (MAF) and Saint Barthélemy (BLM).

All the data was transformed to ETRS LAEA 5210.

Appendix 5

Check if coordinates supplied by countries (in the 2009 descriptive data) are within the country.

Albania

SITECODE	NAME	LAT	LON	Actual Location
101425	Brehdi i Hotoves-Dangelli	44.39461	44.69277	60km SE of Budennovsk, Stavropol Kari, Russia
4679	Divkjake-Karavasta	44.41509	45.642766	NW Dagestan, Russia
	Shebenik-Jabllanice	44.1509	45.642767	NW Dagestan, Russia
182482	Rrapi i Selcës së Sipërme	41.065556	20.775	Lake Ohrid, FYROM

The rest of the coordinates occur within Albania.

Austria:

There are five sites that occur in Yemen, the Latitude and Longitude were **swapped**. When corrected they lie within Austria.

SITECODE	NAME	LAT	LON	Actual Location
386372	Schremser Hochmoor	<i>Restricted</i>	<i>Restricted</i>	Yemen
386373	Lainsitzniederung	<i>Restricted</i>	<i>Restricted</i>	Yemen
386374	Hundsau	<i>Restricted</i>	<i>Restricted</i>	Yemen
386375	Pielach-Mühlau	<i>Restricted</i>	<i>Restricted</i>	Yemen
386376	Pielach-Ofenloch-Neubacher Au	<i>Restricted</i>	<i>Restricted</i>	Yemen

The rest of the coordinates occur within Austria

Bulgaria:

SITECODE	NAME	LAT	LON	Actual Location
349855	Zhdreloto na reka Tundja	41.961944	293955833	Turkey

All lie within Bulgaria except for 1 site that lies 5km within Turkey; this is probably due to the accuracy of the coordinate.

Cyprus:

2 sites have coordinates that do not lie within Ireland.

SITECODE	NAME	LAT	LON	Actual Location
61753	Limni turtle Nesting Beach	35.66667	32.45	51 km NW from the northernmost point on Cyprus (Cape Kormakitis).
14851	Listovounos	34.5	33.166667	15km SE of Cape Gata.

All data supplied by Cyprus covers the area of Cyprus where the Community *acquis* applies at present according to protocol 10 of the Accession Treaty of Cyprus.

Croatia:

2 sites are in Chad (Lat and Long the same) and 2 sites are in Saudi Arabia (Lat and Long are mixed up)

SITECODE	NAME	LAT	LON	Actual Location
378023	Gvozdеноvo-Kamenar	15.916946	15.916946	Chad
377905	Hrast luznjak u Dvoristu skole u rakitovcu	16.140574	16.140574	Chad
377971	Park u Bilju	18.748503	45.604521	Saudi Arabia
377977	Bikela Topola U Valpovu	18.427035	45.661455	Saudi Arabia

Iceland:

1 site has the same latitude and longitude, all other sites lie within Iceland.

SITECODE	NAME	LAT	LON	Actual Location
4453	Haalda	-16.786904	-16.786904	Atlantic

Poland:

17 sites have incorrect coordinates, 1 in Germany, 8 in Lituania, 6 in Belarus, 1 in Ukraine and 1 in Russia.

SITECODE	NAME	LAT	LON	Actual Location
116163	Labunie	50.0500	23.4166	11km inside Ukraine
145183	Stary Przylep	53.1833	14.2500	8 km inside Germany
177380	Jalinka	52.2666	23.5666	10-20km inside Belarus
177546	Rezerwat Krajobrazowy	52.3833	23.7166	10-20km inside Belarus
177497	Nietupa	52.2000	23.7833	10-20km inside Belarus
177351	Gnilec	52.8500	33.6333	Russia
337586	<i>pomnik przyrody</i>	54.5000	23.8000	Lithuania
337587	<i>pomnik przyrody</i>	54.6000	23.1100	Lithuania

SITECODE	NAME	LAT	LON	Actual Location
337588	<i>pomnik przyrody</i>	54.6000	23.1100	Lithuania
337589	<i>pomnik przyrody</i>	54.6000	23.1200	Lithuania
337590	<i>pomnik przyrody</i>	54.6000	23.1200	Lithuania
337591	<i>pomnik przyrody</i>	54.1400	23.8000	Lithuania
337621	<i>pomnik przyrody</i>	54.30000	23.9000	Lithuania
337624	<i>pomnik przyrody</i>	54.3000	23.9000	Lithuania
337627	<i>pomnik przyrody</i>	53.4600	23.8000	7km inside Belarus
337628	<i>pomnik przyrody</i>	53.4600	23.8000	7km inside Belarus
337629	<i>pomnik przyrody</i>	53.4600	23.8000	7km inside Belarus

pomnik przyrody is Polish for “Nature monument”

Portugal:

2 sites have the Latitude and Longitude swapped.

SITECODE	NAME	LAT	LON	Actual Location
PT0700025	Ilhéu da Viúva	32.483732	16.51505	Off Libya
PT0700046	Rocha do Navio	32.483732	16.51505	Off Libya

Serbia:

1 site occurs in Greece, all the remaining sites occur within Serbia.

SITECODE	NAME	LAT	LON	Actual Location
16394	Grmija	40.083333	21.21667	Grevena, Greece

Sweden:

71 sites occur in the Indian Ocean off the coast of Oman/Pakistan (Latitudes and Longitudes have been reversed); they are all located within Sweden once corrected.

Appendix 6

Table highlighting differences in the coordinates from the descriptive data and those calculated by GIS

ISO3	Diff. Over 1km	Diff. Over 10km	Diff. Over 50km	Diff. Over 100km
AUT	231	31	15	9
BEL	48	8	2	1
BGR	84	18	10	8
CYP	2	2	2	2
DNK	86	1		
ESP	1	1	1	1
EST	373	12	5	2
FIN	194	30	15	13
FRA	96	23	8	8
GBR	68	6	1	1
HRV	50	10	5	5
ITA	17	5	5	5
LTU	70	8	4	4
LVA	85	10	5	4
MKD	1	1	1	1
MLT	7	2		
POL	128	28	14	14
ROU	115	14	6	5
SRB	1	1	1	1
SVK	89	20	2	2
SVN	33			
SWE	216	22	20	18
TUR	188	120	29	22

Appendix 7:

Table highlighting differences in the area of the sites comparing the areas as supplied in the tabular data to the GIS derived areas.

ISO3	No. Sites	No. Sites	No. Sites
	Diff. Over 5%	Diff. Over 10%	Diff. Over 50%
AUT	435	335	135
BEL	275	223	126
BGR	707	676	499
DEU	2815	1877	677
DNK	811	578	160
EST	370	281	118
FIN	151	57	2
FRA	943	727	326
GBR	1436	1240	956
HRV	161	127	51
IRL	155	155	155
ISL	33	26	11
ITA	329	224	79
LIE	1		
LTU	4		
LVA	39	16	6
MLT	11	7	2
NOR	119	73	21
POL	58	33	6
PRT	10	8	6
ROU	50	36	17
SVK	463	333	128
SVN	14	10	5
SWE	15	13	11
TUR	42	28	8

Appendix 8: Attributes of shapefiles

Attribute information for the polygon and polyline dataset.

Field	
SITE_CODE	The unique identifier, use this to link to the descriptive data (Seq_SITE_CODE)
PARENT_ISO	ISO 3 digit parent code
ISO_3	ISO 3 digit code
CDDA_Resol	Resolution codes, from Data Dictionary
CDDA_Disse	Dissemination codes, from Data dictionary
Datasource	The source of the data, see the text for more details.

Attribute information for the point data.

Field	
SITE_CODE	The unique identifier
PARENT_ISO	ISO 3 digit parent code
ISO_3	ISO 3 digit code
CDDA_Disse	Dissemination codes, from Data dictionary
Long_DD	Longitude in decimal degree's
Lat_DD	Latitude in decimal degree's
Datasource	The source of the data, see the text for more details.

Appendix 9: changes made to tabular data

Based on data submitted by Member States the following changes were made to the tabular data

Belgium, Norway and Switzerland asked for the EEA to calculate the coordinates of the centroids of the boundaries that had been delivered, therefore the correct value, “02”, for this request was added to the field ‘CDDA_Coordinate_Code’.

Tables: ‘site_boundaries’, ‘sites’, field ‘CDDA_Dissemination_Code’

In regards to the field ‘CDDA_Dissemination_Code’ one value, “00”, stipulates that the “dissemination instructions provided in the metadata for the spatial dataset” are to be used. The relevant metadata files were consulted and based on the instructions the appropriate code, from 01 to 05, was filled in the field. The following changes were made.

Table: site_boundaries; field ‘CDDA_Dissemination_Code’,

AUT – ‘04’

The following all to ‘01’, BEL, BGR, CYP, GRC, IRL, LVA, PRT, SRB

EST – ‘05’ for 2090 records, these are the restricted sites which “are not to be published”, for the remaining sites the value as inputted by the Member State was used.

GBR – ‘05’ They specified in their metadata that none of the existing codes cover their situation.

Table: sites; field ‘CDDA_Dissemination_Code’,

AUT – ‘04’

The following all to ‘01’ (BEL, CHE, CYP, DUE, GRC, IRL, ISL, LVA, MKD, NOR, POL, PRT)

EST – ‘05’ for 2090 records, these are the restricted sites which “are not to be published”, for the remaining sites the value as inputted by the Member State was used.

GBR – ‘05’: They specified in their metadata that none of the existing codes cover their situation.