Merged European CDDA dataset for 2011

Public version

Brian Mac Sharry (MNHN)

Activity 1.2.1.B3

ETC/BD task manager: Sabine Roscher (roscher@mnhn.fr)

EEA project manager: Rania Spyropoulou

Date: 01/07/2011

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

AOPK-CR ECNC EPASA ILE-SAS ISPRA JNCC MNHN SLU UBA-V

Table of contents

1. Delivery of datasets

The following descriptive and spatial data have been uploaded on 01.07.2011 to https://svn.eionet.europa.eu/repositories/Workdata/CDDA

- CDDA_ver9.zip

Spatial data

- Complete_ETRS.zip
- Complete_WGS84.zip
- Public_ETRS.zip
- Public_WGS84.zip

'Complete' consists of all the sites sent by the countries. 'Public' refers to those which have indicated a Dissemination codes that allows for the publication of the dataset. This report discusses the Public dataset

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 region[1]. Effectively this covers EEA member counties, EEA collaborating countries, and Council of Europe (CoE) states which are not collaborating countries of the EEA (EECCA[2]).

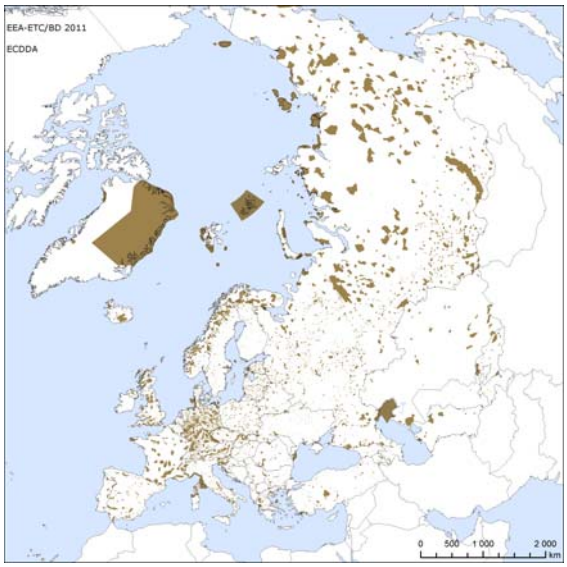


Figure 1: Extent of the ECDDA dataset,

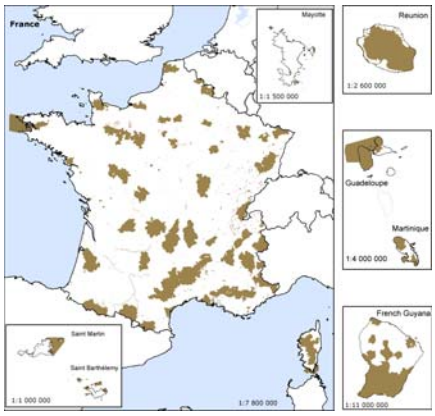


Figure 2: France (metropolitan, Dom-TOM, COM)

[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).

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 Territories[3] and Overseas Collectives[4] (figure 1 and figure 2).

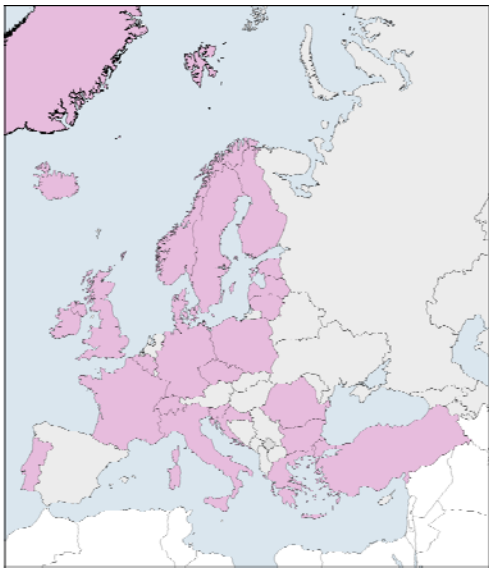
In 2011 for inclusion into version 9 of the CDDA; 28 countries delivered descriptive data (figure 3, & Appendix 1), 24 of these additionally delivered spatial data (figure 4 & Appendix 2). These datasets were subjected to a series of quality control and quality assurance (QA/AC) checks.

Once the data passed these tests it was combined with data, for those countries that did not submit data in 2011, which was extracted from the previous CDDA dataset, version 8.

The combined and integrated dataset that is the 2011 ECDDA covers 52 countries, and consist of a total of 120 456 records in the database and 107 484 spatial records (see Appendix 3 for more details). This is an increase of 10 822 tabular records and over 10 000 spatial records from version 8 of the CDDA. .The various data sources used to create the composite dataset will be discussed in the Results section.

CDDA version	Number of records tabular	Number of records spatial
Version 9	**120 456**	**107484**
Version 8	109 634	101 818

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).



[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 Barthélemy (BLM) (these islands were formerly part of Guadeloupe but seceded to form a COM –Feb 22 2007) and Mayotte (MYT)

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 2011 deliveries, 2009 deliveries and WDPA 2009 boundaries- this will be further discussed in the results section.

Feature class	Number
Polygon	89 186
Point	18 298

2.1 Main Issues

The majority of the data passed the QA/QC tests and was of a good quality. A number of the issues that were identified in the last reporting round were successfully resolved for the 2011 delivery. Those issues that remain, while minor, still result in a considerable extra work load in order to process the data.

The key issue remaining is the use of identifiers for the spatial data. In some cases the identifiers used are not globally unique, that is there are several records in the data set with the same identifier, and in other cases the identifier used is not directly linkable to the equivalent field in the tabular data. In these cases it is matter of examining every record and trying to successfully match spatial records with the matching record in the tabular data, for the vast majority of these cases this is a relatively simple task but nonetheless a time consuming one.

The ideal identifier to use for the spatial data set is either the **'SITE_CODE'** (that is the CDDA/WDPA ID) or the **'SITE_CODE_NAT'** (national site code), where this is not possible the 'Site_Name' should be used. If the 'Site_name' is to be used it should be a direct match for that in the tabular data, same character set, same case, same diacritical marks etc.

For the following countries it was not possible to directly match the spatial unique identifier to the tabular dataset, and therefore it required additional work to do so.

Iceland

Iceland used the name of the site as the unique identifier. In the spatial data this name was in Icelandic characters in the tabular data this was in Latin characters e.g. *Hlið* in spatial data and Hlid in the tabular data. This was relatively easily solved and the Icelandic focal point was very helpful in clarifying any issues.

Latvia

For the Latvian data the site code used as the unique identifier was different to the one used in the 'sites' table. By following the logic of the spatial site code and the tabular 'SITE_CODE_NAT' and cross checking with the site name it was possible to match the two site codes together relatively easily.

Site name	Site code (spatial)	SITE_CODE_NAT
Klagatu purvs	LV0533500	5335
Maizezers	LV0510000	5100

Portugal

Portugal submitted 21 files of these 6 files contained unique identifiers wand could be used; it was not possible to use the remaining 15 files. The unique identifier used for the spatial data was the site name, though this name was not the exact same as in the tabular data. This was primarily due to the addition of the designation type to the site name e.g. Reserva Natural Parcial

Site name Spatial	Site name Tabular
Monumento Natural Regional do Algar do Carvão	Algar do Carvão
Parque Natural da Madeira	Madeira

For those sites where it was not possible to match automatically it was necessary to manually do so.

Poland

Approximately 130 Polish sites had no 'site_code' and the only unique identifier was the site name. The site name in the spatial data did not preserve some of the Polish characters such as ł or ę. For the majority of these sites once the nature of the issue was identified it was possible to match the records but for 4 sites it was not possible to match them with 100% certainty to a corresponding record in the tabular data therefore they were not included in the compiled spatial data set.

GIS Name	Tabular Name??	Comment
Dolina Rurzycy	Dolina Rurzycy	Large discrepancy in the area
Wielkopolska Dolina Rurzycy		No corresponding name
Jezioro Czarne	Jezioro Czarne	Multiple entries for this name
Jezioro Czarne	Jezioro Czarne	Multiple entries for this name

Turkey

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

The unique identifier in the spatial data supplied by Turkey is the site name (MAP_ADI, Bolge_adi, TA_ADI, TKA_ADI, TP_ADI, and 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 shape file 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.

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.

2.3 Spatial Validation

The 28 countries that submitted spatial data did so in the form of shape files, personal geodatabases or in one case a mapinfo file. All the data from these countries was converted to the shapefile format[5] and subjected to a series of spatial QA/QC checks.

The spatial validation consisted of the following stages:

[5] This rational 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.

- 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 4 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 10. 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.

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 extents[6]. 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.

A number of countries did not supply coordinates for their site, instead they asked that the coordinates be calculated automatically where spatial datasets were provided[7]. 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 10

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 site code. All countries had unique identifiers in the spatial data that could be linked to the descriptive data base (version 9) and the site code 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 >5km, >10km, >50km and >100km (Appendix 6 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 >10%, >50% or >100% (Appendix 7 shows a table giving the number of sites per country that fall into these classes).

2.4. Results

Once the data from the 28 EEA and EEA collaborating countries that delivered in 2011 underwent the QA/QC procedures it was merged into a single polygon, and point feature. The

---

[6] 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 of the Sea.

[7] 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 caluclted

data for those countries that did not submit spatial data in 2011 were extracted from the previous CDDA dataset version 8.

The 2011 ECDDA data set covers 52 countries (Appendix 3) with over 120 000 records in the database and over 112 000 spatial records. As mentioned previously there are still a number of restrictions on the dissemination of the data. Table 2 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 shape files as the field 'CDDA_Dissem'

Table 2. 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.

It should be noted that the Finland has given permission for the EEA to deliver the CDDA data to the UNEP for inclusion in the WDPA/protected planet. WCMC is not allowed to deliver the dataset in vector format without the permission of the Finnish Environment Institute. The permission for delivery can be asked by email to arctuki@ymparisto.fi. It is unclear how this fits into the Dissemination codes outlined above, therefore the Finnish data will be flagged as seeking further clarification.

3. Concluding remarks

- The majority of the data delivered under the CDDA reporting cycle is of a high quality.

- The download of datasets from Reportnet and the merging of datasets into a European one is a time consuming task if carried out manually. It is hoped that the development of the automated harvesting, merging of datasets and creation of xml-based QA/QC reports as carried out by the EEA for the Natura 2000 dataflow can be used for the CDDA in the near future, though for this to be realised all datasets needs to have specific data standards.

- The provision of the helpdesk, as well as the initial automatic QA/QC of the data in addition to communication with data providers, where necessary in case of data issues, is considered as being very beneficial in order to assure - or where necessary to improve - the high quality of the CDDA data flow.

- Over the last 18 months the CDDA data has been used for the calculation of Indicators (SEBI 07 on nationally protected areas, CSI 008 on designated areas), it was discussed in the 2nd Message of the '10 messages for 2010' as well as being used in the State of the Environment 210 (SOER 210) report specifically Part B on Biodiversity in Protected Areas.

- With the advert of the Water Framework Directive a number of 'protected sites' are being created such as 'Nitrate vulnerable zones', it needs to be discussed whether these should be covered by the CDDA dataflow or not.

Appendix 1 28 countries

Table listing which countries delivered descriptive data in 2011.

Country	ISO3
Albania	ALB
Belgium	BEL
Bulgaria	BGR
Croatia	HRV
Czech Republic	CZE
Denmark	DNK
Estonia	EST
Finland	FIN
France	FRA
FYROM	MKD
Germany	DEU
Greece	GRC
Iceland	ISL
Ireland	IRL
Italy	ITA
Kosovo (UNSCR 1244/99)	XKX
Latvia	LVA
Lithuania	LTU
Norway	NOR
Poland	POL
Portugal	PRT
Romania	ROM
Serbia	RS
Slovenia	SVN
Sweden	SWE
Switzerland	CHE
Turkey	TUR
United Kingdom	GBR

Appendix 2: 24 countries

Table listing which countries delivered spatial data in 2011.

Country	ISO3
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
Lithuania	LTU
Norway	NOR
Poland	POL
Portugal	PRT
Romania	ROM
Slovenia	SVN
Sweden	SWE
Switzerland	CHE
Turkey	TUR
United Kingdom	GBR

Appendix 3: 52 countries

Table listing which countries make up the 2011 ECDDA and the number of records in the descriptive database and spatial data.

Country	ISO3	Responsabilité	No. of records in database	No. of records in GIS _poly	No. of records in GIS- point
Albania	ALB	EEA	804	53	
Armenia	ARM	WCMC	40	6	6
Austria	AUT	EEA	1228	1110	
Azerbaijan	AZE	WCMC	73	34	2
Belarus	BLR	WCMC	451	122	
Belgium	BEL	EEA	3621	3058	
Bosnia - Herzegovina	BIH	EEA	156	3	
Bulgaria	BGR	EEA	996	803	152
Croatia	HRV	EEA	472	286	159
Cyprus	CYP	EEA	45	17	4
Czech Republic	CZE	EEA	2278	2263	
Denmark	DNK	EEA	2254	1907	
Estonia	EST	EEA	15019	11217	978
Finland	FIN	EEA	9444	9373	
France	FRA	EEA	2006	1934	
FYROM	MKD	EEA	75	3	
Georgia	GEO	WCMC	63	18	2
Germany	DEU	EEA	16882	15986	
Greece	GRC	EEA	835	768	
Hungary	HUN	EEA	250	62	59
Iceland	ISL	EEA	104	102	
Ireland	IRL	EEA	309	155	
Italy	ITA	EEA	883	870	
Kazakhstan	KAZ	WCMC	100	39	
Kosovo (UNSCR 1244/99)	XKX	EEA	97		
Kyrgyzstan	KGZ	WCMC	33	30	
Latvia	LVA	EEA	704	321	
Liechtenstein	LIE	EEA	40	40	
Lithuania	LTU	EEA	340	338	
Luxembourg	LUX	EEA	97		25
Malta	MLT	EEA	178	149	
Moldova	MDA	WCMC	66		
Monaco	MCO	WCMC	2		1
Montenegro	MNE	EEA	37		5
Netherlands	NLD	EEA	1986	1954	1678
Norway	NOR	EEA	2766	2582	184
Poland	POL	EEA	2186	1554	
Portugal	PRT	EEA	212	96	
Romania	ROU	EEA	998	796	
Russia	RUS	WCMC	11384	2317	8984

Serbia	SRB	EEA	241	25	
Slovakia	SVK	EEA	1137	1115	
Slovenia	SVN	EEA	1944	1075	869
Spain	ESP	EEA	1754		
Sweden	SWE	EEA	12852	11439	1211
Switzerland	CHE	EEA	6272	6145	
Tajikistan	TJK	WCMC	23	15	
Turkey	TUR	EEA	2510		
Turkmenistan	TKM	WCMC	32	31	
Ukraine	UKR	WCMC	5198	1257	3939
United Kingdom	GBR	EEA	8864	8783	
Uzbekistan	UZB	WCMC	17	10	
Total			**120456**	**89 186**	**18 298**

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
Estonia	EST	Shapefile	Estonia_1997_Estonia_National_Grid _MI_0
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
Lithuania	LTU	Personal geodatabase	ETRS89-LAEA5210
Norway	NOR	Shapefile	WGS_1984_UTM_Zone_33N
Poland	POL	Shapefile	PUWG-92 & WGS84
Portugal	PRT	Shapefile	WGS84, Lisboa_Hayford_Gauss_IGeoE, Porto_Santo_1936_UTM_Zone_28N
Romania	ROM	Shapefile	Stereo_70
Slovenia	SVN	Personal geodatabase	GCS_WGS_1984
Sweden	SWE	Shapefile	GCS_WGS_1984
Switzerland	CHE	Personal geodatabase	CH1903_LV03
Turkey	TUR	Shapefile	GCS_European_1950
United Kingdom	GBR	Shapefile	GCS_WGS_1984
France, DOM-TOM, COM			
Guadeloupe*	GLP	Shapefile	WGS84_UTM Zone 20N
Martinique	MTQ	Shapefile	WGS84_UTM Zone 20N

French Guyana	GUF	Shapefile	RGFG95_UTM_Zone_22N
Réunion	REU	Shapefile	RGR92 UTM Zone 405
Mayotte	MYT	Shapefile	WGS 1984 UTM Zone 385
St Pierre et Miquelon	SPM	Shapefile	WGS 1984 UTM Zone 21N

*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 2011 descriptive data) are within the country.

This is only run on those countries that supplied data in 2011.

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
555513697	Shebenik-Jabllanice	44.1509	45.642767	NW Dagestan, Russia

The rest of the coordinates occur within Albania.

Croatia:

2 sites are in Chad (Lat and Long the same) and 1 sites is in Saudi Arabia (Lat and Long are mixed up)

SITECODE	NAME	LAT	LON	Actual Location
378023	Gvozdenovo-Kamenar	15.916946	15.916946	Chad
377905	Hrast luznjak - Ratkitovec	16.140574	16.140574	Chad
377971	Bilje – Park Oko Dvorca	18.748503	45.604521	Saudi Arabia

Poland:

14 sites have incorrect coordinates, 1 in Germany, 8 in Lithuania, 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
177351	Gnilec	52.8500	33.6333	Russia
177380	Jalinka	52.2666	23.5666	10-20km inside Belarus
177497	Nietupa	52.2000	23.7833	10-20km inside Belarus
177546	Rezerwat Krajobrazowy	52.3833	23.7166	10-20km inside Belarus
337586	*pomnik przyrody*	54.5000	23.8000	Lithuania
337587	*pomnik przyrody*	54.6000	23.1100	Lithuania
337588	*pomnik przyrody*	54.6000	23.1100	Lithuania

337589	*pomnik przyrody*	54.6000	23.1200	Lithuania
337590	*pomnik przyrody*	54.6000	23.1200	Lithuania
337591	*pomnik przyrody*	54.1400	23.8000	Lithuania
337621	*pomnik przyrody*	54.30000	23.9000	Lithuania
337624	*pomnik przyrody*	54.3000	23.9000	Lithuania
337627	*pomnik przyrody*	53.4600	23.8000	7km inside Belarus

Portugal:

1 site has the Latitude and Longitude swapped.

SITECODE	NAME	LAT	LON	Actual Location
PT0700025	Ilhéu da Viúva	32.483732	16.51505	Off Libya

Serbia:

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

SITECODE	NAME	LAT	LON	
16394	Grmija	40.083333	21.21667	Grevena, Greece

Appendix 6

Table highlighting differences in the coordinates from the descriptive data and those calculated by GIS. The table shows the number of sites with a difference of over 5km, over 10km, over 50km & over 100km.

Country	Diff over 5km	Diff over 10km	Diff over 50km	Diff over 100km
BEL	56	49	29	10
BGR	24	11	3	1
CHE	2			
CZE	6	5	3	1
EST	5	4	4	4
FRA	68	40	2	1
HRV	3	1	1	1
IRL	2	1		
ISL	6	4	1	1
LTU	12	6		
LVA	6	1	1	
NOR	40	17	2	
POL	143	101	44	33
PRT	3	1		
ROU	14	5	5	5
SWE	29	8		

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. The table shows the number of sites with a difference in area of over 10%, 50% & over 100%.

Country	>10%	>50%	> 100%
BEL	2000	1696	753
BGR	653	510	394
CHE	539	499	449
CZE	438	109	45
DUE	1531	553	223
DNK	600	181	73
EST	189	44	16
FIN	81	4	
FRA	622	217	94
HRV	26	7	3
ISL	2	1	
LVA	25	2	1
NOR	72	13	3
POL	309	125	64
PRT	8	3	2
ROU	33	8	
SVN	24	13	9
TUR	33	11	4
GBR	307	282	146