



Council of Europe
Conseil de l'Europe

EU/CoE Joint Programme Emerald Network Phase II

From Data to Information

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Council of Europe
Conseil de l'Europe

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Implemented
by the Council of Europe

Convention de Berne
Bern Convention



Réseau Émeraude
Emerald Network



Presentation Content

- ✓ **Short overview of ALL data collected**
- ✓ **Extracting Information**
- ✓ **Importance of QA/QC**
- ✓ **Presentation of the Emerald Tools**





Example questions

Would you like to know ...

- ✓ **How many of the Resolution species and habitats are present in each country ?**
- ✓ **Where are the sites located with a particular species or habitat ?**
- ✓ **Are there any species or habitats with SUF evaluation in all countries ?**
- ✓ **Is the species also listed in other conventions or regulations ?**
- ✓ **.....**



“Internal” Data Layers

- **Sites:** delivered in xml or MSAccess
- **Site boundaries:** delivered in shp-files and MapInfo
- **Country Reference Data Base:** delivered in MSAccess
- **Draft Conclusions and Conclusions Database:** MSAccess
- **Reference List:** MSAccess (as resulting from biogeo process)
- **Distribution maps** on species and habitats: delivered in a variety of formats but all integrated in shp

- **Database on possible candidate species for Res. 6**



Emerald Sites data growth 2009-2016

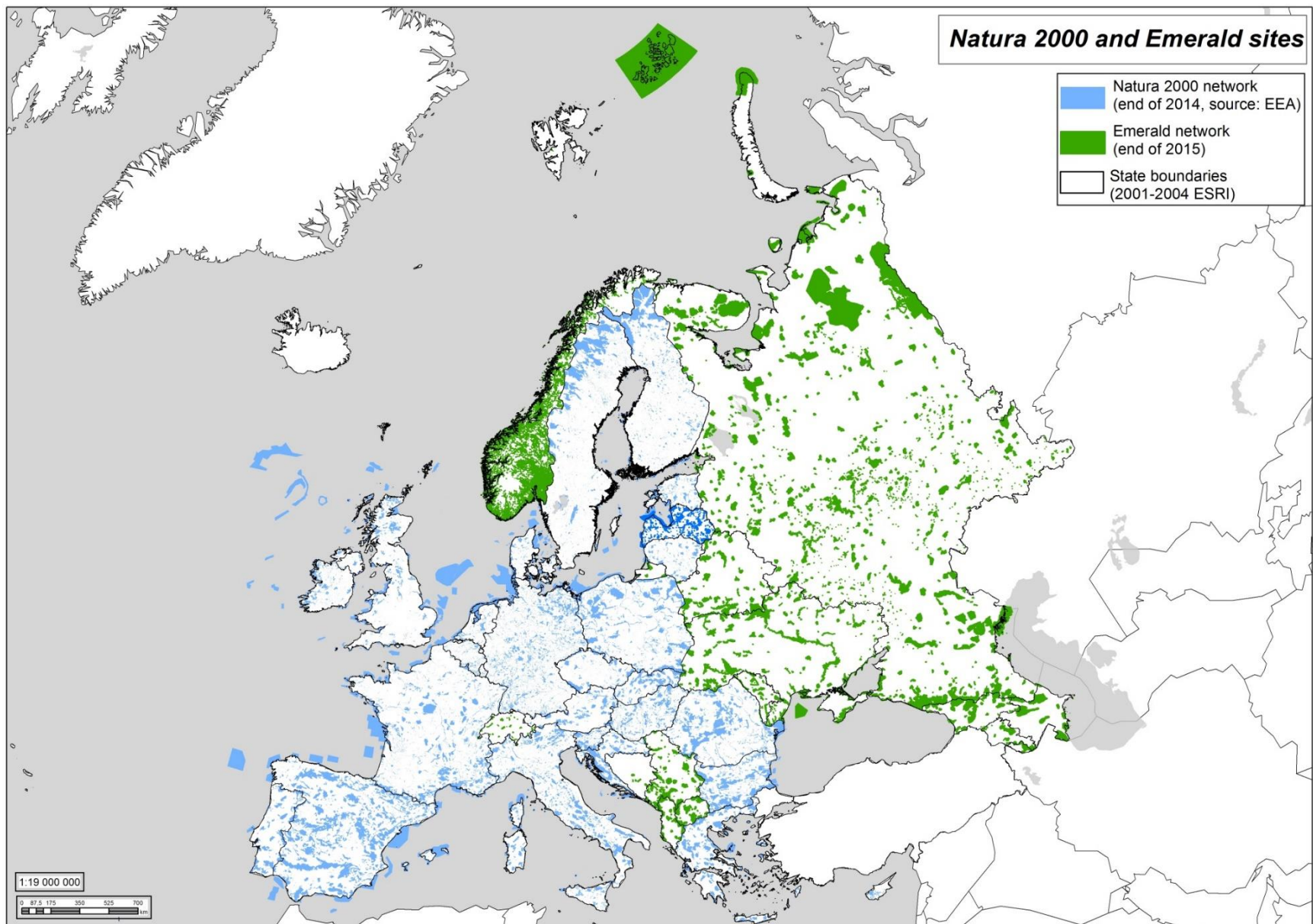
	Total 2009	Total 2010	Total 2011	Total 2014	Total 2015	Total 2016
Sites	143	249	959	1588	2019	2179
Amph./Rept.	250	370	795	915	1108	1195
Birds	5234	8770	16450	28171	23068	25067
Fish	348	603	1174	1330	1566	1846
Habitats	850	1224	3849	4990	8054	9386
Invertebrates	357	670	1254	1928	2423	2734
Mammals	591	851	1714	2501	3150	3322
Plants	185	298	1379	1716	2165	2320



Emerald Sites data overview September 2016

	Number of Sites	Sites Total Area (km ²) As from tabular data	Percentage tabular
AM	21	4975.44	16.6
AZ	16	8698.69	10.0
BY	155	23060.71	11.1
GE	52	10458.65	15.0
MD	48	2678.38	7.9
RU	1616	496393.51	12.5
UA	271	59400.92	9.8

Emerald and N2000 Site Boundaries





Results of all biogeographical evaluation Seminars

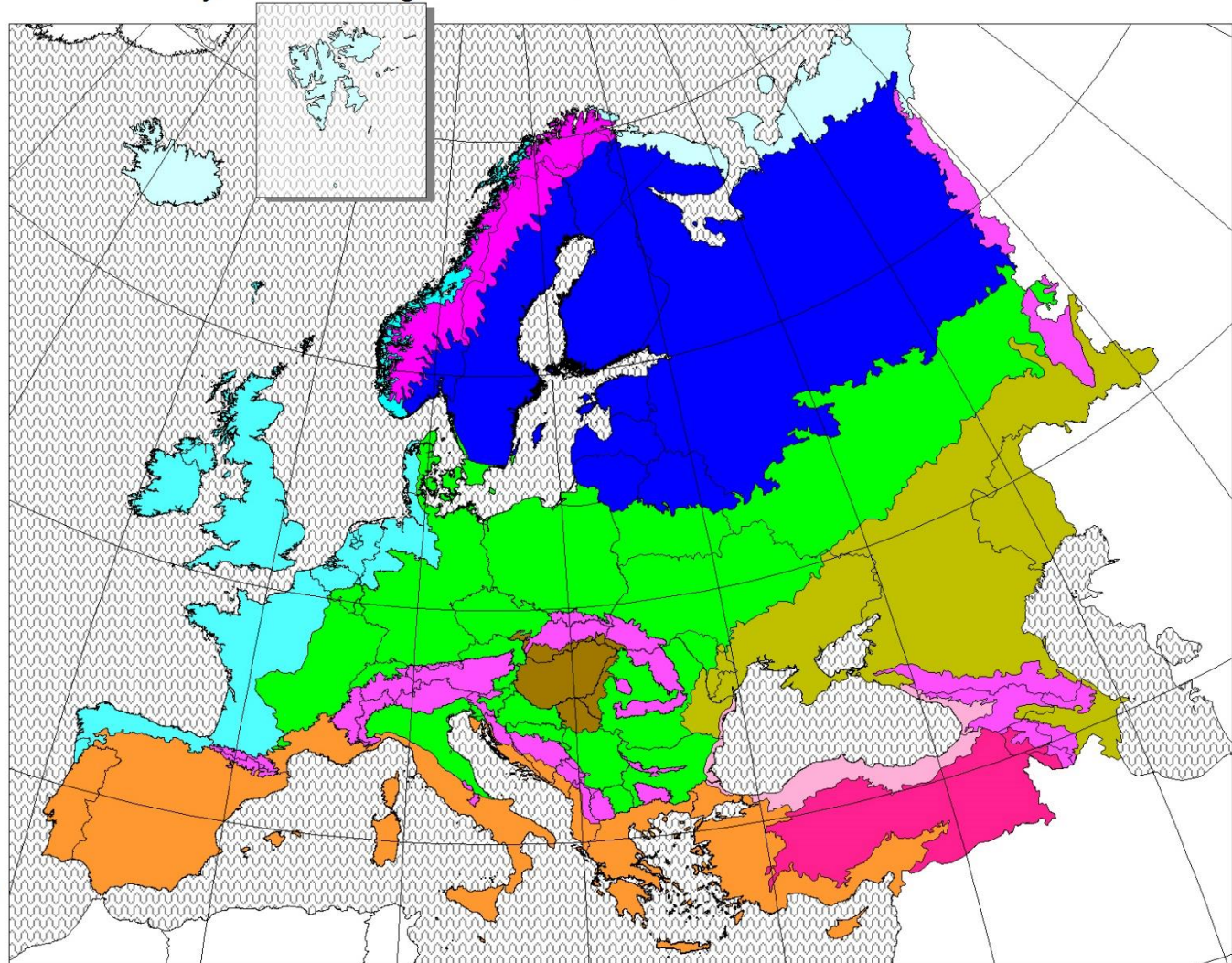
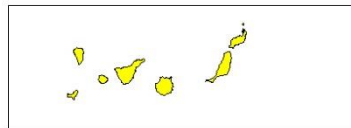
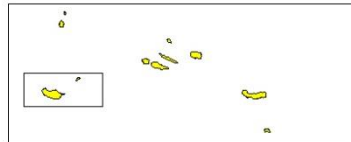
- ✓ **Consolidated version of countries
*Reference Lists***
- ✓ **Consolidated version of countries
*Conclusions Databases***



Emerald Network of Areas of Special Conservation Interest

Extention of the Biogeographical Regions map of NATURA 2000 to the European Continent

As endorsed by the Standing Committee of the Bern Convention 2010



The Biogeographical map developed under Council Directive 92/43/CEE (NATURA 2000) formed the basis for this Pan-European extension. 5 Biogeographical regions were added (Arctic, Pannonian, Steppic, Black Sea and Anatolian).



Emerald Network Evaluation Seminars

Year	Venue	Countries concerned	Biogeographical regions concerned	Species and Habitats covered
2011	Bar (Montenegro)	Albania, Bosnia and Herzegovina, Montenegro, Serbia, "the former Yugoslav republic of Macedonia	MED, ALP, CON, PAN	All
2012	Basel (Switzerland)	Switzerland	ALP, CON	All
2013	Trondheim (Norway)	Norway	ARC, ALP, ATL, BOR	All
2015	Tbilisi (Georgia)	Armenia, Azerbaijan, Georgia	STE, ALP-Caucasus, ANA	All (except birds)
2015	Petrozavodsk (the Russian Federation)	Belarus, Republic of Moldova, Russian Federation, Ukraine	ARC, BOR, ALP-Ural	All (except birds)
2015	Minsk (Belarus)	Belarus, Republic of Moldova, Russian Federation, Ukraine	n/a	Birds
2016	Chisinau (Republic of Moldova)	Belarus, Republic of Moldova, Russian Federation, Ukraine	CON, ALP-Car, PAN	All (except birds)
2016	Trondheim (Norway)	Norway	ARC, ALP, ATL, BOR	All (selection)
2016	Kiev (Ukraine)	Republic of Moldova, Russian Federation, Ukraine	STE, ALP-Caucasus, BLS	All (except birds)
2016	Tbilisi (Georgia)	Armenia, Azerbaijan, Georgia	n/a	Birds



Biogeographical Regions in Emerald Network Countries

Country code	Number of biogeographical regions	7 – ENP Countries
AL	2	
AM	2	2
AZ	3	3
BA	3	
BY	2	2
CH	2	
GE	3	3
MD	2	2
ME	2	
MK	2	
NO	5	
RS	3	
RU	7	7
UA	4	4
TOTAL:	42	23



Number of Res. 6 Species and Res. 4 Habitats in Reference List

	Birds	Plants	Habitats	Species
RU	137	82	122	119
AZ	122	16	40	41
UA	112	60	116	111
AM	108	10	28	37
AL	108	9	69	68
MK	103	9	57	66
RS	98	15	65	72
ME	98	13	70	76
BA	92	12	53	77
MD	80	15	33	68
BY	72	22	57	64
NO	56	46	27	33
GE	53	17	44	53
CH	49	11	41	45



BIRDS: Number of countries per species

CODE	Species	Number of countries
A246	Lullula arborea	14
A307	Sylvia nisoria	14
A338	Lanius collurio	14
A379	Emberiza hortulana	14
A022	Ixobrychus minutus	13
A068	Mergus albellus	13
A072	Pernis apivorus	13
A081	Circus aeruginosus	13
A082	Circus cyaneus	13
	



Number of Species and Habitats according to consolidated Reference List

nr-countries	Species	Birds	Plants	Habitats
14	2	8		3
13	9	14		9
12	5	19	1	4
11	8	15	1	3
10	6	17		9
9	4	7	3	6
8	4	9	2	7
7	8	7	2	10
6	16	15	3	5
5	21	13	8	14
4	23	6	3	18
3	19	7	16	9
2	26	11	38	41
1	42	25	63	31
selection:	38	50	20	"19+1"



Reference List: Results, BIRDS

	AL	AM	AZ	BA	BY	CH	GE	MD	ME	MK	NO	RS	RU	UA
A001	X		ND			X	ND	X	X	X	X	SR REF	X	X
A002	X		ND		X	X	ND	X	X	X	X	SR REF	X	X
A003											X			
A007	X		ND	SR REF					X	SR REF	X		X	X
A010	X								SR REF					
A014											X			
A015											X			
A019		ND	ND					X		X			X	X
A020	X	ND	ND					X	X	X			X	X
A021	X	ND	ND	X	X	X		X	X	X		X	X	X
A022	X	ND	ND	X	X	X	ND	X	X	X		X	X	X
A023	X	ND	ND	X	X			X	X	X		X	X	X
A024	X	ND	ND	X				X	X	X		X	X	X
A026	X	ND	ND	X			ND	X	X	X		X	X	X



Reference List: Results, HABITATS

CODE	AL-ALP	AL-MED	AM-ALP	AM-ANA	AZ-ALP	AZ-ANA	AZ-STE	BA-ALP	BA-CON	BA-MED	BY-BOR	BY-CON	CH-ALP	CH-CON
C1.222	SR REF	X							X		X	X	X	X
C1.223									X		X	X		
C1.224	X	X	X					SR REF	X	SR REF	X	X	X	X
C1.225	SR REF	X	X		X	SR REF			X	SR REF		X		
C1.226	SR REF											X		
C1.2416							SR REF							
C1.25	SR REF	SR REF							SR REF		X	X	X	X
C1.32												X		
C1.33												X		
C1.3411	X	X						X	X	X	X	SR REF		X



Presence of HABITATS: number of biogeo-regions

CODE	AL	AM	AZ	BA	BY	CH	GE	MD	ME	MK	NO	RS	RU	UA
C1.1	2	1	2	3	1	2	1		2	1	4	2	6	2
C1.222	2			1	2	2		2	1	2		2	4	3
C1.223				1	2			2				2	4	3
C1.224	2	1		3	2	2	2	2	2	2		3	6	3
C1.225	2	1	2	2	1		2	1		2		2	4	3
C1.226	1				1			1		2		2	2	2
C1.2416			1										1	
C1.25	2			1	2	2		1	2	2		2	5	4
C1.32					1			2					3	4
C1.33					1			2					3	4
C1.3411	2			3	2	1		1	2	2		3	4	3
C1.3413				2	1	2		1				2	3	3



Habitats: Number of countries per habitat

CODE	HABITAT_TITLE	CountOfcountry
E3.5	Moist or wet oligotrophic grassland	14
G1.A4	Ravine and slope woodland	14
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	14
H1	Terrestrial underground caves, cave systems, passages and waterbodies	13
C1.1	Permanent oligotrophic lakes, ponds and pools	13
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation	13
G1.11	Riverine Salix woodland	13



HABITATS: Number of habitats per country-count

Number of Habitats	CountOfcountry
3	14
9	13
4	12
3	11
9	10
6	9
7	8
10	7
5	6
14	5
18	4
9	3
41	2
31	1



43 Res. 4 HABITATS without any reference in any country

CODE	TITLE
B1.9	Machair
B3.24	Unvegetated Baltic rocky shores and cliffs
C1.24113	Transylvanian hot-spring lotus beds
D6.23	Interior Iberian salt pan meadows
E1.55	Eastern sub-Mediterranean dry grassland
E2.15	Macaronesian mesic grassland
E3.3	Sub-mediterranean humid meadows
E7.3	Dehesa
F2.32	Subalpine and oroboreal Salix brush
F2.336	Rhodope Potentilla fruticosa thickets
F2.41	Inner Alpine Pinus mugo scrub
F2.42	Outer Alpine Pinus mugo scrub
F2.43	Southwestern Pinus mugo scrub
F2.44	Apennine Pinus mugo scrub
F2.45	Hercynian Pinus mugo scrub
F3.12	Buxus sempervirens thickets
F3.21	Montane Cytisus purgans fields



CONCLUSIONS DATABASE: BIRDS (11 countries)

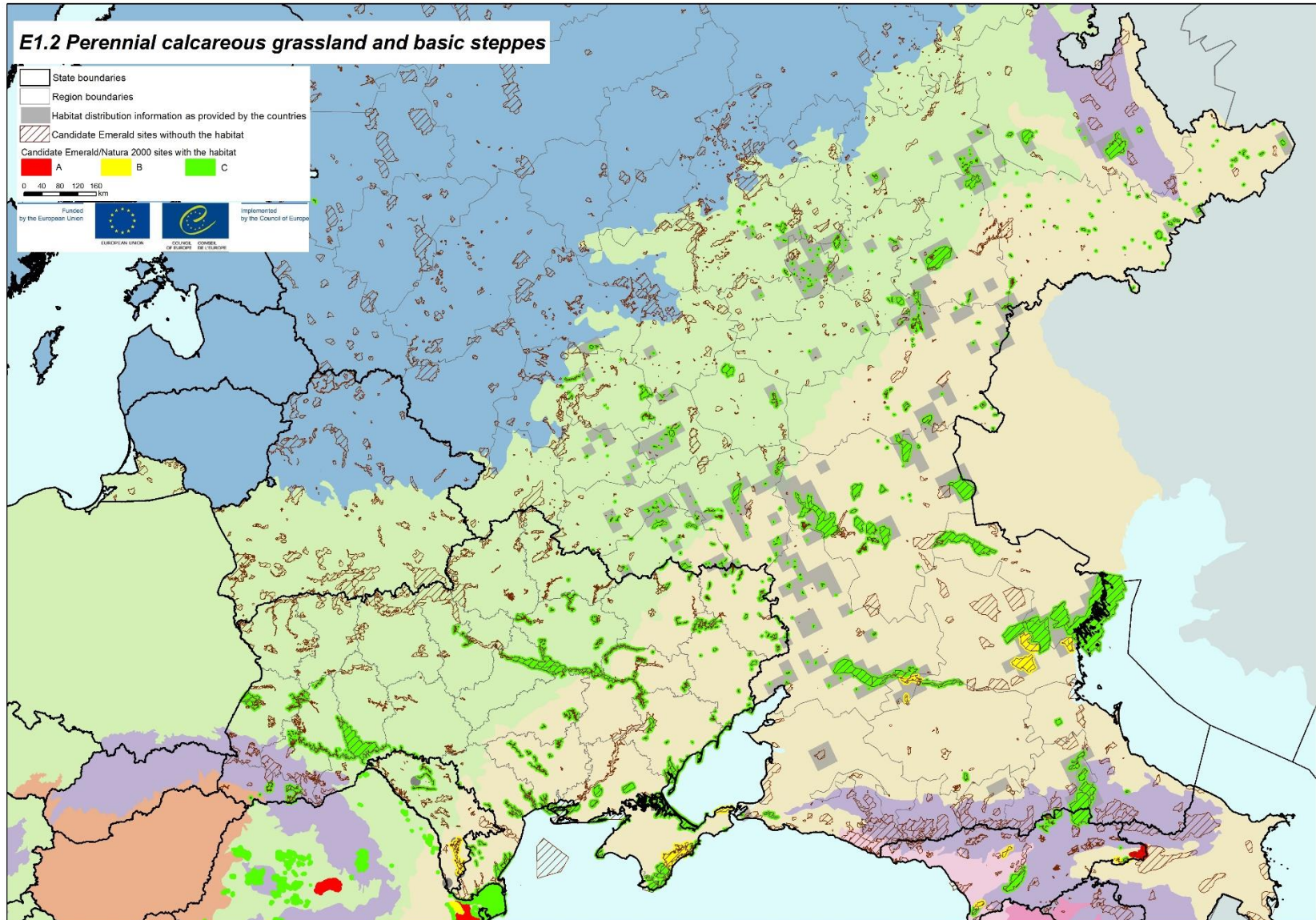
CODE	AL	BA	BY	CH	MD	ME	MK	NO	RS	RU	UA
A001	SUF	EXCL REF	EXCL REF	X	IN MOD	SUF	IN MIN	IN MOD	SR Ref	IN MOD/SR	SUF/CD
A002	SUF	EXCL REF	IN MOD	X	IN MOD	SUF/CD	SUF	IN MOD	SR Ref	IN MIN/IN MOD	SUF/CD
A003	EXCL REF	EXCL REF		EXCL REF/CD		EXCL REF/CD	EXCL REF	IN MOD	EXCL REF		
A007	SUF	SR Ref	EXCL REF	EXCL REF		IN MIN	SR Ref	IN MOD	EXCL REF	IN MIN/IN MOD	SUF
A010	SR	EXCL REF				SR Ref	EXCL REF		EXCL REF		
A014								SUF/CD			
A015								SUF/CD			
A019	EXCL REF	EXCL REF			IN MIN	EXCL REF	SUF/CD		EXCL REF	IN MOD	SUF



Total number of Species and Habitats present in at least 1 of the countries concerned

Taxonomic group	N° of species listed in Res No. 6 (1998)	N° of species from Res No. 6 (1998) present in 14 countries	N° in biogeo regions
Amphibians	29	9	89
Fish	84	51	396
Invertebrates	136	75	738
Mammals	65	45	546
Reptiles	31	13	126
Plants (excl. 121 species for MAC)	563	140	581
Subtotal:	908	333	2476
Birds	207	173	173
Habitats (Res. 4 (1996))	212	169	1755
Total:	1327	675	4404

Example map Biogeo Evaluation, including distribution data





QA/QC and data merging problems

- ✓ **Small differences in data structure between countries (even with SDF manager tool: use of “back door” to enter data)**
- ✓ **Mismatching or missing species codes or names**
- ✓ **Duplicated species and habitat records**
- ✓ **Difference in GIS data formats (shp and Mapinfo)**
- ✓ **Mismatching site codes between tabular and GIS**

- ✓ **Revision of Res. 4 and Res. 6**
- ✓ **Species listed at genus level in Res. 6 but evaluation at individual species level**



Revision of Res. 4 (2014): Switzerland

CODE in SDF	HABITAT_TITLE	RES4-2014
C1.44	Charophyte submerged carpets in dystrophic waterbodies	C1.4
C3.41	Euro-Siberian perennial amphibious communities	C3.4
C3.511	Freshwater dwarf [Eleocharis] communities	C3.51
C3.5132	Swards of small [Cyperus] species	C3.51
C3.5133	Wet ground dwarf herb communities	C3.51
E1.112	[Sempervivum] or [Jovibarba] communities on rock debris	E1.11

Revision of Res. 4 (2014): Norway

CODE in SDF	title	RES4-2014
C3.41	Euro-Siberian perennial amphibious communities	C3.4
C3.511	Freshwater dwarf Eleocharis communities	C3.51



QA/QC and data merging problems

- ✓ For the Reference List, all Habitat codes changed to Res. 4 version 2014
- ✓ For the Conclusions Database, no changes made as the comments may refer to specific issues related to the previous code
- ✓ For the Sites Database, no changes made; remains the responsibility of the Countries !



Concluding Remarks

- ✓ **More efforts towards efficient QA/QC management**
- ✓ **Further development of a Transparent Data flow and data flow rules**
- ✓ **Include reporting data flow in the process**
- ✓ **....**



Presentation of Emerald Data Tools

- ✓ **SDF manager: sites tabular data input and export tool**
- ✓ **Emerald Web App: instrument for the secretariat but also QA/QC feed back to countries**
- ✓ **Emerald viewer:**
- ✓ **Links to EUNIS and others**



Let's discuss !

