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Harmonisation between lists of habitat types targeted by Resolution 4 (1996) of the Bern Convention and Annex I of the Habitats Directive

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Background

When adopting Resolution 3 (1996) of the Bern Convention which encourages Contracting Parties to set up a pan- European Ecological Network, and Resolution No 5 (1998), which gives the framework for the Network of Areas of Special Conservation Interest (ASCIs) under the Emerald Network, Parties to the Bern Convention aimed at ensuring maximum consistency between the Emerald and the EU Natura 2000 approaches. Resolution 5 (1998) further states that "for Contracting Parties which are Member States of the European Union, Emerald Network sites are those of the Natura 2000 [the EU network of protected areas under the EU Birds and Habitats Directives]". One of the aims was that the Emerald approach should help EU candidate countries to prepare for the Natura 2000 process.

However the lists of habitat types for which sites should be proposed under each legal instrument (Annex I of the Habitats Directive and Resolution 4 (1996) of the Bern Convention) have major differences which have increased as the number of Annex I habitat types has increased from 192 to 231 as a result of EU Enlargement. As became apparent during the Emerald seminar for the West Balkans held at Bar in November 2011, this means that the work by Parties to identify sites, which qualify under the current Resolution 4, has limitations as preparation for Natura 2000.

This document aims to identify differences between Annex I and Resolution 4 and to make recommendations to harmonise the two lists as far as possible. This follows earlier work to harmonise the lists of species for Emerald and Natura 2000 Networks, completed in 2011(CoE 2011a, b).

The current Resolution 4 is a list of habitat types based on the EUNIS habitats classification (Council of Europe 2010) although this is a translation from the original Resolution 4 which was based on the earlier but no longer supported Palaearctic Classification (Devillers & Devillers-Terschuren 1996). This simply lists the EUNIS classes for which sites should be proposed, very rarely with a qualifier (e.g. **'**F9.3 Southern riparian galleries and thickets (Excluding F9.35: Riperian stands of invasive shrubs)', 'G1.7 Thermophilous deciduous woodland (excluding G1.7D *Castanea sativa* woodland)'). A manual (CoE 2011c) based on the descriptions of the EUNIS classes information mostly taken from the EUNIS website[1] and other sources gives some further but this does not add any further qualifiers.

By contrast, the habitat types listed in Annex I of the Habitats Directive, although initially a selection of classes from the CORINE Biotopes classification (Commission of the European Communities 1991) has evolved over time and today Annex I habitat types have a name which includes one or more of biota (usually vegetation), geography and abiotic factors, for example '1530 Pannonic salt steppes & salt marshes', '6270 Fennoscandian lowland species-rich dry to mesic grasslands', '6420 Mediterranean tall humid grasslands of the *Molinio-Holoschoenion'*. The habitat types are described in a manual (European Commission 2007) which has a legal status as it is formally adopted by the Habitats Committee (a committee established under the Directive to oversee its implementation). The manual gives a short description, often with reference to appropriate plant communities, together with the equivalent unit(s) in the Palaearctic classification (where possible) and frequently in national and regional classifications.

As a result, a given habitat type from the Palaearctic classification (or its EUNIS equivalent) can be part of two or more Annex I habitat types, and there are also many problems arising from differing national interpretations (Evans 2006, 2010). There are also many Annex I habitat types which are landscape units rather than habitat types (e.g. '1620 'Boreal Baltic islets and small islands'), particularly from the Boreal biogeographical region, which are composed of several EUNIS classes, or in some cases as habitat complexes.

[1] http://eunis.eea.europa.eu/habitats.jsp

Annex I also indentifies certain habitat types as being 'priority' (indicated by an asterisk '*') some of which are subtypes of non-priority habitat types, e.g. '4040 Dry Atlantic coastal heaths with *Erica vagans*' (EUNIS F4.234 Northern *Erica vagans* heaths) is a subtype of '4030 Dry Heaths' (EUNIS F4.2 Dry heaths).

This difference in approach means that there are considerable difficulties in comparing Annex I and Resolution 4 and that a EUNIS based Resolution 4 will never be completely in harmony with the current Annex I. However, it is possible to considerably improve the current position and ensure that Emerald proposals and designations by EU Candidate Countries help as far as possible with preparations for Natura 2000. Annex I habitat types not currently covered by Resolution 4 include many from Scandinavia and their addition to Resolution 4 would help make Resolution 4 more appropriate for Norway (CoE 2007).

Comparing Annex I and Resolution 4

A spreadsheet was prepared using the databases behind the EUNIS habitats classification website listing the EUNIS habitat classes associated with each Annex I habitat type. In some cases additional sources of information were also consulted, in particular Rodwell et al (2003). It was then checked if the associated EUNIS habitat class(es) are listed on Resolution 4. The following types of correspondence are found:

A) Annex I Habitat type & Resolution 4 Habitat type are the same
(e.g. '1220 Perennial vegetation of stony banks' is the same as Resolution 4 'B2.3 Upper shingle beaches with open vegetation'

B) Annex I Habitat type not covered by Resolution 4
(e.g. '6520 Mountain hay meadows' is EUNIS class E2.3 Mountain hay meadows which is not listed on Resolution 4)

C) Annex I Habitat type is partly covered by Resolution 4 Habitat type(s)
(e.g. '6110 Rupicolous calcareous or basophilic grasslands of the *Alysso-Sedion albi'* is EUNIS class E1.11 Euro-Siberian rock debris swards which is partly covered by Resolution 4 'E1.112 : *Sempervivum* or *Jovibarba* communities on rock debris')

D) Annex I Habitat type is covered by a Resolution 4 Habitat type but the Resolution 4 habitat type is broader
(e.g. '6190 Rupicolous pannonic grasslands (*Stipo-Festucetalia pallentis*)' is EUNIS class E1.29 : *Festuca pallens* grassland which is a part of the Resolution 4 habitat type 'E1.2 : Perennial calcareous grassland and basic steppes)'

Changes required to harmonise Annex I and Resolution 4

For 'A' no further action is required as the same habitat type is clearly covered by both Annex I and Resolution 4 and for a Candidate Country only a simple change in the Emerald database is required for conversion to Natura 2000.

For 'B' it is recommended that the equivalent EUNIS class is added to Resolution 4. In some cases a single EUNIS class may correspond to two (or more) Annex I habitat types requiring some expert knowledge when moving from Emerald to Natura.

For 'C' it is necessary either to add additional EUNIS classes or to change an existing Resolution4 habitat type to a broader class. For example '4060 Alpine and Boreal heaths' is EUNIS class F2.2 Evergreen alpine and subalpine heath and scrub which is partly covered by the Resolution 4

habitat types ‘F2.224 Carpathian *Rhododendron kotschyi* heaths’, ‘F2.225 Balkan *Rhododendron kotschyi* heaths’ and ‘F2.26 *Bruckenthalia* heaths’. To completely cover the Annex I habitat type it is necessary to add 8 level 4 classes or to replace the existing habitat types with F2.2 Evergreen alpine and subalpine heath and scrub.

With ‘D’ the Annex I habitat type is covered but Candidate Countries may find that a site chosen for a Resolution 4 habitat type does not host any Annex I habitat type or that transferring records from Emerald to Natura 2000 databases is not simple

For example only part of the Resolution 4 habitat type ‘E3.5 Moist or wet oligotrophic grassland’ is covered by Annex I (‘6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)’ = E3.51 *Molinia caerulea* meadows and related communities). Sites with E3.52: Heath *Juncus* meadows and humid *Nardus stricta* swards would not be eligible for Natura 2000 (unless they also hosted other habitats or species of Community Interest).

There are also cases where a Resolution 4 habitat type corresponds to two or more Annex I types and although the Emerald site would qualify as a Site of Community Importance additional work will be required to identify which Annex I habitat type is present unless this information has been recorded elsewhere. For example the Resolution 4 habitat type ‘G1.6 Beech woods’ corresponds to 14 Annex I habitat types.

Annex 1 lists additions and other changes required to take account of B and C while table 1 shows which habitat groups would be most effected.

Table 1: Number of additions and other changes per habitat group

Habitat groups (EUNIS level 1)	Additions	Other changes
A : Marine habitats	0	0
B : Coastal habitats	4	0
C : Inland surface waters	14	3
D : Mires, bogs and fens	1	0
E : Grasslands and lands dominated by forbs, mosses or lichens	18	2
F : Heathland, scrub and tundra	19	0
G : Woodland, forest and other wooded land	9	4
H : Inland unvegetated or sparsely vegetated habitats	12	0
I : Regularly or recently cultivated agricultural, horticultural and domestic habitats	0	0
J : Constructed, industrial and other artificial habitats	0	0
X : Habitat complexes	2	0
Total	79	9

Marine habitats

Annex I is widely recognised as having a poor coverage of marine habitats, partly as a result of it being adopted when there was no agreement that the directive applied to areas beyond 12 nautical miles (Evans 2012). Some of the Annex I marine habitat types are also difficult to cover by the EUNIS habitats classification as they correspond to a great number of EUNIS classes, this is especially the case for ‘1170 Reefs’. Given these problems, it is recommended not to change the current coverage of marine habitat types by Resolution 4.

Points for discussion

- Should Emerald habitat types which are wider than Annex I be revised?
- Is it preferable to add wide habitat types (possibly covering 2 or more Annex I types) or several narrow types?
- Should Emerald habitat types which correspond to two or more Annex I habitat types be split to aid transfer from the Emerald to the Natura 2000 databases?
- Should geographical qualifiers be used where the EUNIS habitat class has a wider geographical distribution than the Annex I habitat type to be covered?
- How should marine habitat types be treated?
- Should a revision be presented to the 2012 Standing Committee or is it preferable to wait for proposals for additional habitat types resulting from the work underway in Central and Eastern Europe and the South Caucasus and present a single update?

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Annex 1 – Recommended changes to Resolution 4

a) Proposed additional habitat types

Add	Natura 2000 code	Annex I name	Comment
B1.1 : Sand beach driftlines	1210	Annual vegetation of drift lines	or extend to B1 - all B1 listed except B1.1 & B1.2 : Sand beaches above the driftline; replace with B1 : Coastal dunes and sandy shores ?
B2.1 : Shingle beach driftlines	1210 1610	Annual vegetation of drift lines Baltic esker islands with sandy, rocky and shingle beach vegetation and sublittoral vegetation	 or new habitat complex ?
B3.24 : Unvegetated Baltic rocky shores and cliffs	1620	Boreal Baltic islets and small islands	or new habitat complex ?
B3.3 : Rock cliffs, ledges and shores, with angiosperms	1230 1240 1250 1250	Vegetated sea cliffs of the Atlantic and Baltic Coasts Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp Vegetated sea cliffs with endemic flora of the Macaronesian coasts Vegetated sea cliffs with endemic flora of the Macaronesian coasts	Add B3.3 for all regions or 5 regional habitats (B3.31-35)
C1.24113 Transylvanian hot-spring lotus beds	31A0	Transylvanian hot-spring lotus beds	only in Romania
C1.32 : Free-floating vegetation of eutrophic waterbodies	3150	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* -type vegetation	
C1.33 : Rooted submerged vegetation of eutrophic waterbodies	3150	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* -type vegetation	
C2.111 : Fennoscandian mineral-rich springs and springfens	7160	Fennoscandian mineral-rich springs and springfens	

C2.18 : Acid oligotrophic vegetation of spring brooks	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	
C2.19 : Lime-rich oligotrophic vegetation of spring brooks	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	
C2.1A : Mesotrophic vegetation of spring brooks	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	
C2.1B : Eutrophic vegetation of spring brooks	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	
C2.25 : Acid oligotrophic vegetation of fast-flowing streams	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	not all this class is Annex I habitat
C2.26 : Lime-rich oligotrophic vegetation of fast-flowing streams	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	not all this class is Annex I habitat
C2.27 : Mesotrophic vegetation of fast-flowing streams	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	not all this class is Annex I habitat
C2.28 : Eutrophic vegetation of fast-flowing streams	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	not all this class is Annex I habitat
C2.33 : Mesotrophic vegetation of slow-flowing rivers	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	not all this class is Annex I habitat
C2.34 : Eutrophic vegetation of slow-flowing rivers	3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	not all this class is Annex I habitat
D6.23 : Interior Iberian salt pan meadows	1410	Mediterranean salt meadows (*Juncetalia maritimi*)	
E1.115 : Fenno-Scandian pioneer rock swards	6280	Nordic alvar and precambrian calcareous flatrocks	

E1.12 : Euro-Siberian pioneer calcareous sand swards	6120	Xeric sand calcareous grasslands	
E1.55 : Eastern sub-Mediterranean dry grassland	62A0	Eastern sub-mediteranean dry grasslands (*Scorzoneratalia villosae*)	
E1.72 : *Agrostis* - *Festuca* grassland	6270	Fennoscandian lowland species-rich dry to mesic grasslands	or E1.722 : Boreo-arctic *Agrostis* - *Festuca* grasslands ?
E1.9 : Open non-Mediterranean dry acid and neutral grassland, including inland dune grassland	2330 2340	Inland dunes with open Corynephorus and Agrostis grasslands Pannonic inland dunes	otherwise 9 of 11 sub units for 2330 & 2340 - additional classes are E1.9A Pontic inland dunes & E1.9B Standing stone inland dunes (BG only)
E2.15 : Macaronesian mesic grassland	6180	Macaronesian mesophile grasslands	
E2.2 : Low and medium altitude hay meadows	6510	Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	
E2.3 : Mountain hay meadows	6520	Mountain hay meadows	error in EUNIS, this is the EUNIS equivalent
E4.11 : Boreo-alpine acidocline snow-patch grassland and herb habitats	6150	Siliceous alpine and boreal grasslands	ommitted from EUNIS website
E4.12 : Boreo-alpine calcicline snow-patch grassland and herb habitats	6170	Alpine and subalpine calcareous grasslands	error on EUNIS website
E4.31 : Alpic *Nardus stricta* swards and related communities	6230 6140	Species-rich *Nardus* grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe) Siliceous Pyrenean *Festuca eskia* grasslands	upland subtypes (or add E4.3 see 6150) (E4.314 : Pyrenean closed *Festuca eskia* grassland)
E4.32 : Oroboreal acidocline grassland	6150	Siliceous alpine and boreal grasslands	consider E4.3 : Acid alpine and subalpine grassland - wider but most Annex I
E4.34 : Alpigenous acidophilous grassland	6150	Siliceous alpine and boreal grasslands	consider E4.3 : Acid alpine and subalpine grassland - wider but most Annex I
E4.36 : Oro-Iberian acidophilous grassland	6160	Oro-Iberian Festuca indigesta grasslands	consider E4.3 : Acid alpine and subalpine grassland - wider but most Annex I
E4.39 : Oro-Moesian acidophilous grassland	62D0	Oro-Moesian acidophilous grasslands	consider E4.3 : Acid alpine and subalpine grassland - wider but most Annex I
E4.4 : Calcareous alpine and subalpine grassland	6170	Alpine and subalpine calcareous grasslands	wider but all sub classes except E4.44 : Ponto-Caucasian alpine grassland listed in EU27

E5.44 : Mediterranean grasslands on alluvial river banks	3280	Constantly flowing Mediterranean rivers with *Paspalo-Agrostidion* species and hanging curtains of *Salix* and *Populus alba*	covers non tree part of habitat, trees at least partly covered by eg G1.11
E5.5 : Subalpine moist or wet tall-herb and fern stands	6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	upland forms of habitat 6430
F2.32 : Subalpine and oroboreal *Salix* brush	4080	Sub-Arctic *Salix* spp scrub	
F2.336 : Rhodope *Potentilla fruticosa* thickets	40B0	Rhodope *Potentilla fruticosa* thickets	
F2.41 : Inner Alpine *Pinus mugo* scrub	4070	Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)	all listed level 4 sub units of F2.4 are included in 4070 but not stands with *Pinus sylvestris* (described at level 3 but not as at level 4)
F2.42 : Outer Alpine *Pinus mugo* scrub	4070	Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)	all listed level 4 sub units of F2.4 are included in 4070 but not stands with *Pinus sylvestris* (described at level 3 but not as at level 4)
F2.43 : Southwestern *Pinus mugo* scrub	4070	Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)	all listed level 4 sub units of F2.4 are included in 4070 but not stands with *Pinus sylvestris* (described at level 3 but not as at level 4)
F2.44 : Apennine *Pinus mugo* scrub	4070	Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)	all listed level 4 sub units of F2.4 are included in 4070 but not stands with *Pinus sylvestris* (described at level 3 but not as at level 4)
F2.45 : Hercynian *Pinus mugo* scrub	4070	Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)	all listed level 4 sub units of F2.4 are included in 4070 but not stands with *Pinus sylvestris* (described at level 3 but not as at level 4)
F3.12 : *Buxus sempervirens* thickets	5110	Stable xerothermophilous formations with *Buxus sempervirens* on rock slopes (*Berberidion* pp)	wider than 5110 but no sub classes
F3.16 : *Juniperus communis* scrub	5130	*Juniperus communis* formations on heaths or calcareous grasslands	
F3.21 : Montane *Cytisus purgans* fields	5120	Mountain *Cytisus purgans* formations	
F3.245 : Eastern Mediterranean deciduous thickets	5330	Thermo-Mediterranean and pre-desert scrub	EUNIS class is wider than *Crataegus azarous* var *aronia* scrub which are currently not covered by Res 4
F3.247 : Ponto-Sarmatic deciduous thickets	40C0	Ponto-Sarmatic deciduous thickets	
F5.13 : Juniper matorral	5210	Arborescent matorral with *Juniperus* spp	

F5.171 : Iberian arid zone *Ziziphus* matorral	5220	Arborescent matorral with *Zyziphus*	
F5.18 : *Laurus nobilis* matorral	5230	Arborescent matorral with *Laurus nobilis*	
F5.516 : *Laurus* thickets	5310	Laurus nobilis thickets	
F5.517 : Coastal *Helichrysum* garrigues	5320	Low formations of *Euphorbia* close to cliffs	
F5.51G : Tall spiny broom brush	5330	Thermo-Mediterranean and pre-desert scrub	wider than *Genista fasselata* scrub currently not covered by Res 4
F5.53 : *Ampelodesmos mauritanica* - dominated garrigues	5330	Thermo-Mediterranean and pre-desert scrub	
G1.31 : Mediterranean riparian *Populus* forests	92A0	*Salix alba* and *Populus alba* galleries	
G1.917 : Oroboreal *Betula* woods and thickets	9040	Nordic subalpine/subarctic forests with *Betula pubescens* ssp *czerepanovii*	
G1.918 : Eurasian boreal *Betula* woods	9010	Western Taïga	
G1.925 : Boreal *Populus tremula* woods	9010	Western Taïga	
G1.B3 : Boreal and boreonemoral *Alnus* woods	9010 9030	Western Taïga Natural forests of primary succession stages of landupheaval coast	
G3.134 : Holy Cross fir forests	91P0	Holy Cross fir forest (*Abietetum polonicum*)	only Poland
G3.1F : Enclave *Picea abies* forests	9410	Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*)	
G3.A : *Picea* taiga woodland	9010	Western Taïga	
G3.B : *Pinus* taiga woodland	9010	Western Taïga	
H2.1 : Cold siliceous screes	8110	Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*)	or H2 : Screes
H2.3 : Temperate-montane acid siliceous screes	8110 8150	Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) Medio-European upland siliceous screes	or H2 : Screes
H2.2 : Cold limestone screes	8120	Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii)*	or H2 : Screes
H2.4 : Temperate-montane calcareous and ultra-basic screes	8120	Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii)*	or H2 : Screes

H2.5 : Acid siliceous screes of warm exposures	8130 8160	Western Mediterranean and thermophilous scree Medio-European calcareous scree of hill and montane levels	or H2 : Screes 8160 is H2.613 & is a priority subtype of 8130
H2.6 : Calcareous and ultra-basic screes of warm exposures	8140	Eastern Mediterranean screes	or H2 : Screes allows for HR amendment to EUR27
H3.1 : Acid siliceous inland cliffs	8220	Siliceous rocky slopes with chasmophytic vegetation	
H3.2 : Basic and ultra-basic inland cliffs	8210 62B0	Calcareous rocky slopes with chasmophytic vegetation Serpentinophilous grassland of Cyprus	H3.2 is wider than 8210, calcareous cliffs only would be H3.21 – H3.2D (although including H3.27 : Aegeo-east-Mediterranean basiphile chasmophyte communities) H3.2763 : Troodos serpentine chasmophyte communities is 62B0, only Cyprus
H3.511 : Limestone pavements	8240	Limestone pavements	error in EUR27
H4.2 : Ice caps and true glaciers	8340	Permanent glaciers	
H4.3 : Rock glaciers and unvegetated ice-dominated moraines	8340	Permanent glaciers	
H6 : Recent volcanic features	8320	Fields of lava and natural excavations	all sub classes included under 8320 except H6.18 : Western Asian fumaroles and solfataras & H6.23 : Western Asian orovolcanic communities found in eg Turkey
X09 : Pasture woods (with a tree layer overlying pasture)	6530	Fennoscandian wooded meadows	but wider as not restricted to Fennoscandia - add qualifier such as ‘only in Fennoscandia’?
X27 : Machair complexes	21A0	Machairs (in Ireland)	

b) Proposed changes to existing Resolution 4 habitat types

Proposal	Existing Resolution 4 name(s) (2010)	Natura 2000 code	Annex I name	Comment
C1.4 : Permanent dystrophic lakes, ponds and pools	C1.44 : Charophyte submerged carpets in dystrophic waterbodies	3160	Natural dystrophic lakes and ponds	
C3.4 Species-poor beds of low-growing water-fringing or amphibious vegetation	C3.41 Euro-Siberian perennial amphibious communities C3.421 Short Mediterranean amphibious communities C3.422 Tall Mediterranean amphibious communities C3.431 Ponto-Pannonic riverbank dwarf sedge communities	1150	Coastal lagoons	but necessary for Coastal Lagoons ? (1150 mostly covered by other Resolution 4 habitat types)
C3.42 : Mediterraneo-Atlantic amphibious communities	C3.421 : Short Mediterranean amphibious communities C3.422 : Tall Mediterranean amphibious communities	3120 3170	Oligothrophic waters containing very few minerals generally on sandy soils of the West Mediterranean, with *Isoetes* spp Mediterranean temporary ponds (priority subtype of 3120)	or maybe C3.4 C3.4 : Species-poor beds of low-growing water-fringing or amphibious vegetation (but includes water cress beds) 2 of 3 subunits of C3.42 Mediterraneo-Atlantic amphibious communities listed (C3.423 : Mediterranean amphibious crypsis swards not listed).
C3.51 : Euro-Siberian dwarf annual amphibious swards	C3.511 : Freshwater dwarf *Eleocharis* communities C3.512 : Dune-slack *Centaurium* swards C3.5132 : Swards of small *Cyperus* species C3.5133 : Wet ground dwarf herb communities	3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoeto-Nanojuncetea*	all sub classes listed except C3.5131 : Toad-rush swards (Communities of temporary pools, flooded ruts of forest paths, and other sufficiently lit temporarily inundated or moist soils of nemoral, boreonemoral and boreal Palaearctic Eurasia

				dominated by *Juncus bufonius* .)
E1.11 : Euro-Siberian rock debris swards	E1.112 : *Sempervivum* or *Jovibarba* communities on rock debris	6110	Rupicolous calcareous or basophilic grasslands of the *Alysso-Sedion albi*	
E5.4 : Moist or wet tall-herb and fern fringes and meadows	E5.4111 : *Angelica archangelica* fluvial communities E5.4112 : *Angelica heterocarpa* fluvial communities E5.4113 : *Althaea officinalis* screens E5.414 : Continental river bank tall-herb communities dominated by *Filipendula* E5.423 : Continental tall-herb communities of humid meadows	6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	single level 3 class which covers all lowland forms (7 level 6 units noted)
G1.22 : Mixed *Quercus* - *Ulmus* - *Fraxinus* woodland of great rivers	G1.221 : Great medio-European fluvial forests	91F0	Riparian mixed forests of *Quercus robur, Ulmus laevis* and U*lmus minor, Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*)	
G3.1E : Southern European *Picea abies* forests	G3.1E1 : Southeastern Moesian *Picea abies* forests G3.1E3 : Montenegrine *Picea abies* forests G3.1E4 : Pelagonide *Picea abies* forests G3.1E5 : Balkan Range *Picea*	9410	Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*)	adds G3.1E2 : Apennine spruce forests (Italy only)

	*abie*s forests			
G3.5 *Pinus nigra* woodland (but excluding G3.57 : *Pinus nigra* reforestation)	G3.51 : Alpino-Apennine *Pinus nigra* forests G3.52 : Western Balkanic *Pinus nigra* forests G3.53 : *Pinus salzmannii* forests G3.54 : Corsican *Pinus laricio* forests G3.55 : Calabrian *Pinus laricio* forests G3.56 *: Pinus pallasiana* and *Pinus banatica* forests	9530	(Sub-) Mediterranean pine forests with endemic black pines	all sub classes except G3.57 : Pinus nigra reforestation listed seperately consider listing G3.5 but excluding G3.57 ?
G3.7 : Lowland to montane mediterranean *Pinus* woodland (excluding *Pinus nigra*)	all 4 sub classes of G.371 noted individually 'G3.72 : *Pinus pinaster* ssp. *pinaster* (*Pinus mesogeensis*) forests, G3.73 : *Pinus pinea* forests 9 sub classes of G.374 noted individually & all units of G3.75 : *Pinus brutia* forests	9540	Mediterranean pine forests with endemic Mesogean pines	replaces 18 subclasses