Annex 2. Descriptions for revised EUNIS heathland, scrub and tundra classification

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B Coastal habitats	B1 Coastal dunes and sandy shores	B1.5 Coastal dune heaths	Should be divided into two types, according to dominant species			Stable dunes with a leached surface and vegetation dominated by *Calluna vulgaris* , *Empetrum nigrum* or *Erica* spp.
				B1.5a Atlantic and Baltic coastal *Empetrum* heath	Heath on stable, decalcified dune sands along the cooler north Atlantic and Baltic coasts of Europe, dominated by *Empetrum nigrum* , with or without *Calluna vulgaris* , or occurring in dune slacks when *Erica tetralix* may also be abundant or even replace *Empetrum* with the same suite of associates. Persistent where wind-exposure or light grazing prevent succession to scrub or woodland.	
				B1.5b Atlantic coastal *Calluna* and *Ulex* heath	Heath on stable, decalcified, sharply-draining dune sands along the warmer, more humid Atlantic coast of Europe, dominated by *Calluna vulgaris* , *Erica* spp. and/or *Ulex* spp and other low spiny legumes often with a strong contingent of grasses and sedges. Persistent where wind-exposure or light grazing prevent succession to scrub or woodland.	
		B1.6 Coastal dune scrub	Should be split into two types on the basis of geographical variation			Stable dunes with scrub, e.g. *Hippophae rhamnoides, Salix repens* in the north, or *Juniperus* spp. or sclerophyllous shrubs in the south.
				B1.6a Atlantic and Baltic coastal dune scrub	Scrub dominated by a wide diversity of low to tall shrubs on stabilised dry dune sands and in dune slacks along the Atlantic and Baltic coasts, the composition varying according to regional climate and ground conditions. Fen vegetation with low *Salix repens* or grassland with *Rosa spinosissima* are not included.	

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				B1.6b Mediterranean and Black Sea coastal dune scrub	Scrub dominated by a wide diversity of low to tall shrubs on stabilised dry dune sands along the Mediterranean and Black sea coasts, often grading to dune grassland or woodland, the associated herb flora showing elements from these neighbouring vegetation types or mosaics.	
				B1.6c Macaronesian coastal dune scrub	Often sparse scrub on coastal dune sands in the arid Mediterranean climate in parts of the Canarian archipelago.	
	B2 Coastal shingle	B2.5 Shingle and gravel beaches with scrub	Should be merged with other habitat types on shingle and gravel beaches			Coastal gravel banks with scrub. Included are dense thermo-mediterranean brushes on gravel banks beside the Mediterranean and heaths on shingle in the nemoral zone.
F Heathland, scrub and tundra	F1 Tundra	F1.1 Shrub tundra		F1.1 Shrub tundra	Tundra with a usually extensive cover of sub-shrubs or low shrubs over herbs, mosses and lichens on sporadically permafrost soils of the southern arctic and subarctic zones, often grazed into grassy mosaics.	Tundras of the southernmost tundra belt, characterized by an abundance of medium small and small shrubs, including 1-2 m tall *Alnus fruticosa* , 0.5-0.8 m tall *Salix lanata* , *Betula nana* , *Betula exilis* , *Salix reptans* , *Salix pulchra* , and of dwarf shrubs, in particular, *Vaccinium uliginosum* , *Vaccinium vitis-idaea* , *Ledum decumbens* ,*Rubus chamaemorus* , *Empetrum hermaphroditum* , *Empetrum nigrum* , *Arctostaphylos alpina* . They extend south to the wooded taiga belt.

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		F1.2 Moss and lichen tundra		F1.2 Moss and lichen tundra	Tundra of the middle and northern high arctic zone where permafrost soils, often occurring in patterned ground, support a frequently sparse cover of mosses, lichens and low herbs.	Tundras of the middle tundra belt, characterized by a thick cover of mosses, formed notably by *Hylocomium splendens* , *Aulacomnium turgidum* , *Tomentypnum nitens* , *Ptilidium ciliare* , with dwarf shrubs, particularly *Dryas octopetala* , *Cassiope tetragona* , *Salix reptans* , *Vaccinium vitis-idaea* , sedges, among which the often dominant *Carex ensifolia* . Drier stands alternate in mosaic fashion with wetter areas dominated by sedges, in particular, *Carex stans* , *Eriophorum angustifolium* , *Eriophorum scheuchzeri* , and grasses, notably *Arctophila fulva* , *Dupontia fischeri* .
	F2 Arctic, alpine and subalpine scrub	F2.1 Subarctic and alpine dwarf willow scrub		F2.1 Subarctic and alpine dwarf *Salix* scrub	Salix-dominated dwarf scrub, often with abundant bryophytes and lichens, on skeletal calcareous or siliceous soils in late snow beds with a short growing-season, occurring in the subarctic north of the woodland zone and in the high mountains of nemoral Europe, increasingly local and fragmentary to the south.	Salix scrub composed of species that rarely exceed 1.5 m in height. Dwarf willow scrub is well developed in boreal and arctic mountains and in subarctic lowlands. In mountains of the nemoral and warm-temperate zones, stands of dwarf willow scrub are of much smaller extent and are charactistic of late-lying snow patches. They occur in the Alps, Pyrenees, Carpathians and Caucasus, and very locally to the south in the Paeonian mountains, Sierra Nevada, Cordillera Central, Monti Sibillini and Abruzzi. They occur locally in the Scottish Highlands and in the Sudeten.
		F2.2 Evergreen alpine and subalpine heath and scrub	Should be split into three types, on the basis of dominant growth form			Small, dwarf or prostrate shrub formations of the alpine and subalpine zones of mountains, dominated by ericaceous species, *Dryas octopetala* , dwarf junipers, brooms or greenweeds; *Dryas* heaths of the British Isles

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				F2.2a Alpine and subalpine ericoid heath	Dwarf-shrub vegetation dominated by ericoids and other woody species (not Juniperus or genistoids) occurring in high mountains throughout Europe, varying in dominants and associates according to regional climate, degree of exposure and snow lie, soil reaction, soil depth and moisture.	
				F2.2b Alpine and subalpine *Juniperus* scrub	Juniper-dominated vegetation of the montane to sub-alpine belts of European mountains, occurring as primary vegetation tolerant of both high exposure and snow-lie, but also a secondary derivative of deforested, long-grazed and eroded ground at high altitides	
				F2.2c Balkan subalpine genistoid scrub	Genistoid heath and scrub of high mountains in the Balkans, often in primary grassy mosaics at higher altitudes, but also extending below the timberline where wood-cutting and grazing open up the woodland cover and sustain the vegetation as an anthropogenic replacement	
		F2.3 Subalpine deciduous scrub		F2.3 Subalpine deciduous scrub	Low scrub, including krummholz, dominated by various deciduous trees and shrubs, on moist but free-draining, sometimes quite fertile, soils on high mountain slopes throughout Europe, often with long snow-lie and prone to natural disturbance due to avalanche and scree slides, after which it is well able to recover and recolonise. The associated flora can be rich in tall mountain herbs. It can also be found as a secondary succession stage in abandoned subalpine pastures and meadows.	Subalpine scrubs of *Alnus, Betula, Salix* and Rosaceae (*Amelanchier, Potentilla, Rubus, Sorbus*), less than 5 m tall, often accompanied by tall herbs that in the absence of scrub would be classified as E5.5. Excludes dwarf *Salix* scrub (F2.1), which is composed of species that rarely exceed 1.5 m in height, and scrub on waterlogged soils (F9.2).

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		F2.4 Conifer scrub close to the tree limit		F2.4 Subalpine *Pinus mugo* scrub	*Pinus mugo* krummholz on mineral soils with long snow-lie above the tree line through the mountains of central and eastern Europe. Woody and herbaceous associates and the sometimes abundant bryophyte layer vary according to the base-richness of the soils and ground moisture.	Scrubland with dwarf conifers (krummholz), often with incomplete canopy cover, close to the tree limit. At the arctic tree limit, the trees are of species that can grow to large stature under favourable conditions. However *Pinus mugo* of central and southern Europe is often genetically fixed as a shrub. Excluded are stands of forest conifers with height > 3 m (G3).
	F3 Temperate and mediterranean-montane scrub	F3.1 Temperate thickets and scrub	F3.1 and F3.2 should be merged and then split into six types on the basis of dominant growth form			Successional and plagioclimax scrub, mostly deciduous, of Atlantic, sub-Atlantic or subcontinental affinities, characteristic of the nemoral zone, but also colonizing cool, moist or disturbed stations of the Mediterranean evergreen forest zone. Included are thickets of *Buxus sempervirens, Corylus avellana, Cytisus scoparius, Juniperus communis, Prunus spinosa, Rubus fruticosus* and *Ulex europaeus* .
				F3.1a Lowland to montane temperate and submediterranean *Juniperus* scrub	Juniperus communis scrub on nutrient-poor sandy and calcareous soils through the temperate and submediterranean lowlands and foothills of Europe. The juniper can be very patchy in occurrence, often related to past land-use, and with a striking variety of growth forms, the associated flora being very diverse according to soil base-status, sharing much in common, where the scrub is open, with local calcicolous grasslands or heath.	
				F3.1b Temperate *Rubus* scrub	Low *Rubus* -dominated scrub, deciduous or sometimes evergreen, of successions and ecotones in a wide variety of semi-natural landscapes through the Atlantic zone and elsewhere in sub-montane Europe where a locally moist climate prevails. *Rubus* is an enormously diverse genus of often apomictic and endemic taxa with associated floras related to soil base-status and moisture.	

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				F3.1c Lowland to montane temperate and submediterranean genistoid scrub	Low scrub dominated by various woody legumes on mostly sharply-draining, nutrient-poor acidic soils through the temperate and submediterranean lowlands and mediterranean foothills of Europe. To the north the vegetation is usually found in successions or ecotones within pastoral landscapes and is often rather species-poor; further south, the scrub can occur as a more persistent or repeatedly renewed habitat among rocky or unstable hill-slopes with richer associated floras.	
				F3.1d Balkan -Anatolian submontane genistoid scrub	Open scrub, dominated by *Genista rumelica /lydia* endemic to steep rocky slopes and screes, and also degraded woodland, in the lowlands and foothills of the south-eastern Balkans, on various soils but especially rich on limey substrates where calcicolous grassland species figure strongly among the associated flora	
				F3.1e Temperate and submediterranean thorn scrub	Scrub dominated by a diversity of mostly thorny shrubs, small trees and saplings, in successions and ecotones on mesic soils in a wide variety of semi-natural landscapes through the temperate and submediterranean lowlands of Europe but sometimes extending to higher altitudes, as with the Balkan šibljak. The dominants and associated floras vary widely with differences in regional climate and soils.	
				F3.1f Low steppic scrub	Low scrub, dominated by various, often clonal, shrubs frequently forming patches in locally mesic and sheltered situations within the dry grasslands of the steppe zone of central and eastern Europe. It can form a persistent natural landscape element or develop after abandonment of pasturing.	

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				F3.1g *Corylus avellana* scrub	Low scrub dominated by *Corylus avellana* , permanently maintained by exposure to winds and on shallow soils along the north Atlantic coast and locally on rocky slopes and cliffs through the Continental region	
				F3.1h Temperate forest clearing scrub	Often dense scrub of shrubs and small trees invading after natural or anthropogenic clearance in woodlands of the temperate zone.	
		F3.2 Submediterranean deciduous thickets and brushes	F3.1 and F3.2 should be merged and then split into six types on the basis of dominant growth form			Successional and plagioclimax scrub, mostly deciduous, of the submediterranean and supramediterranean zones, but also colonizing cool, moist or disturbed stations of the mediterranean evergreen forest zone. Included are some non-leafy brushes, for example *Cytisus purgans* and *Genista aetnensis*
	F4 Temperate shrub heathland	F4.1 Wet heaths		F4.1 Wet heath	Heath with prominent *Erica tetralix* on shallow, acid, nutrient-poor peats and peaty mineral soils, kept moist for much of the year and often seasonally waterlogged, through the Atlantic and sub-Atlantic lowlands and foothills of Europe. Typically occurring in wet depressions and seepage areas within dry heaths or as a marginal zone around bogs where drainage of deeper peats can increase its extent. In milder oceanic climates, other *Erica* and *Ulex* spp. occur in richer humid heath. Frequently influenced by grazing and sod-cutting.	Wet or humid ericoid-shrub dominated heaths of the Atlantic and sub-Atlantic zones, developed on peaty or semipeaty soils, waterlogged for at least part of the year, sometimes temporarily inundated, and usually moist even in summer.

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		F4.2 Dry heaths		F4.2 Dry heath	Heath dominated by various ericaceous sub-shrubs on free-draining, nutrient-poor, acid sands and siliceous soils through the lowlands and foothills of western and central Europe, extending northwards in more oceanic situations and into continental regions at higher rainier altitudes. Very often influenced by grazing and burning and frequently a secondary vegetation type derived by clearance of acidophilous woodland and maintained anthropogenically.	Heaths on siliceous, podsolic, rarely- or never-waterlogged soils in moist Atlantic and sub-Atlantic climates of the plains and low mountains of Western and Central Europe.
		F4.3 Macaronesian heaths		F4.3 Macaronesian heath	Shrubby vegetation on thin soils in the Azores, Madeira and Canary Islands, colonising pyroclastic debris, lava, rock outcrops and landslips, sometimes cyclically renewed by further disturbance or seral to woodland. Floristically diverse between and within the archipelagoes.	Heaths of the Canary Islands, Azores and Madeira.
	F5 Maquis, arborescent matorral and thermo-Mediterranean brushes	F5.1 Arborescent matorral	F5.1 and F5.2 should be merged into one type as these types are difficult to distinguish			Successional and plagioclimax evergreen sclerophyllous or lauriphyllous vegetation of mediterranean or warm-temperate humid affinities with a more or less dense, broken or low arborescent cover and with a usually thick, high evergreen shrub stratum. Arborescent matorral derives mostly from degradation or regrowth of broad-leaved evergreen forests (G2) or is intermediate between them and maquis (F5.2); some derives from thermophilous deciduous (G1.7) or conifer (G3.7) forests.

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				F5.1 Mediterranean maquis and arborescent matorral	Evergreen sclerophyllous or lauriphyllous shrub vegetation forming a dense closed canopy, with or without low emergent trees, on a wide variety of substrates and soils through the thermo- to meso-Mediterranean belts. May be permanent primary vegetation on xeric sites but is usually derived by degradation of evergreen deciduous or coniferous woodland and much influenced in structure and composition by grazing and fire	
		F5.2 Maquis	F5.1 and F5.2 should be merged into one type as these types are difficult to distinguish			Evergreen sclerophyllous or lauriphyllous shrub vegetation, with a more or less closed canopy structure, and with few annuals, some geophytes and often scattered trees, some of which may be in shrub form. Unlike arborescent matorral, maquis is typically dominated by species that do not have the potential to grow into tall trees. In high maquis these may be *Arbutus* spp., *Erica arborea, Erica scoparia, Juniperus oxycedrus, Phillyria* spp. In low maquis, *Cistus* spp., *Erica* spp., *Genista* spp., *Lavandula* spp. may predominate.

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		F5.3 Pseudomaquis		F5.3 Submediterranean pseudomaquis	Mixed deciduous and evergreen scrub of shallow, rocky, mostly calcareous soils in the lowlands and foothills of southern Europe, particularly the east. Usually derived by woodland degradation and much affected in structure and composition by grazing, fire and logging.	Mixed sclerophyllous evergreen and deciduous shrub thickets of the periphery of the range of Mediterranean sclerophyllous scrublands. They include, in particular, shrub formations of the Balkan and Italian peninsulas intermediate between Mediterranean maquis and schibljak, resulting from the degradation of thermophilous deciduous woodland G1.7, with a mixture of evergreen and deciduous bushes including *Quercus coccifera, Juniperus oxycedrus, Quercus trojana, Carpinus orientalis, Ostrya carpinifolia, Pistacia terebinthus, Buxus sempervirens, Berberis cretica, Paliurus spina-christi, Pyrus spinosa, Rosa* spp., similar Iberian formations with *Amelanchier ovalis, Prunus lusitanica, Ilex aquifolium* , French and Italian formations with *Quercus pubescens* and *Quercus ilex* , formations of Mediterranean Asia Minor and the Levant dominated by mixed deciduous and evergreen shrubs or small trees, in particular, *Quercus coccifera* (*Quercus calliprinos*) and *Pistacia palaestina* .
		F5.4 *Spartium junceum* fields		F5.4 *Spartium junceum* scrub	Scrub dominated by *Spartium junceum* , typical of disturbed, open, sunny situations on a wide variety of soils through the Mediterranean and sub-Mediterranean, where its rapid establishment is favoured by post-fire seed germination, aggressive rooting, nitrogen-fixation and unpalatability.	Thickets and brushes of Spanish broom, *Spartium junceum* , widespread in mediterranean and submediterranean areas of western Europe.

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		F5.5 Thermo-Mediterranean scrub		F5.5 Thermo-Mediterranean scrub	Scrub with a usually low and rather open cover of shrubs with sub-shrubs, dwarf shrubs and herbs between, on dry soils of varied composition through the thermomediterranean zone, and of very diverse local composition. Primary and permanent in more arid and exposed situations, but can be successional to woodland and often much affected by grazing.	Shrub formations characteristic of the thermo-Mediterranean zone. Included here are those formations, for the most part indifferent to the siliceous or calcareous nature of the substrate, that reach their greatest extent or optimal development in the thermo-Mediterranean zone, typically with abundant *Pistacia lentiscus, Myrtus communis, Phillyrea* spp., *Erica manipuliflora, Styrax officinalis, Genista fasselata, Euphorbia dendroides, Calicotome villosa* and *Sarcopoterium spinosum* . Also included are the numerous, strongly characterized, thermophile formations endemic to the south of the Iberian peninsula, mostly thermo-Mediterranean but sometimes meso-Mediterranean; in their great local diversity they are a western counterpart of, and sometimes approach in appearance, the mostly eastern Mediterranean phryganas F7.
	F6 Garrigue	F6.1 Western garrigues	Should be split into two types on the basis of soil characteristics			Shrubby formations, often low, on mostly calcareous soils of the meso-mediterranean zone of the Iberian peninsula, France, Italy and the large western Mediterranean islands, notably the Balearics, Corsica, Sardinia, Sicily and Malta. Included here are those formations that reach their optimal development within the mesomediterranean zone although they often enter the thermo- or supra-mediterranean levels.

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				F6.1a Western basiphilous garrigue	Sub-shrub vegetation dominated by nanophanerophytes and chamaephytes on thin, base-rich soils through the western thermo- to mesomediterranean belts, very diverse in composition with differences in local climate and soils. In rockier situations, it can be a permanent coloniser but is often derived from woodland clearance and is much affected by grazing and fire.	
				F6.1b Western acidophilous garrigue	Sub-shrub vegetation dominated by nanophanerophytes on thin acidic soils, both hard silicate and soft sands, through the western thermo- to lower supramediterranean belts, very diverse in composition with differences in local climate and soils. In rockier situations, it can be a permanent coloniser but is often derived from woodland clearance or abandonment of farm fields and is much affected by grazing and fire.	
		F6.2 Eastern garrigues	F6.2, F6.3 and F6.4 should be merged			Shrubby formations, often low, of the meso-, thermo- and occasionally supramediterranean zones of Greece, southern Albania, Cyprus and southern Anatolia. Included here are all sclerophyllous formations, regardless of substrate, except those with conspicuous spiny cushion structure (F7), those with abundant thermo-Mediterranean scrub species (F5.5) and high maquis with *Erica arborea* and *Arbutus* spp. (F5.2).
		F6.3 Illyrian garrigues	F6.2, F6.3 and F6.4 should be merged			Shrubby formations, often low, of the meso- and occasionally supra-Mediterranean zones of the Adriatic lowlands of the Balkan peninsula from Istria to southern Albania. Included here are all sclerophyllous formations, regardless of substrate, except high maquis (F5.2) with *Erica arborea* and *Arbutus* spp.

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		F6.4 Black Sea garrigues	F6.2, F6.3 and F6.4 should be merged			Shrubby formations of the Mediterranean enclaves of the Black Sea coasts, in Crimea, southern Bulgaria, Turkey-in-Europe and northern Anatolia, as well as of the Mediterraneo-steppic zone of southern Thrace. Included here are all sclerophyllous formations, regardless of substrate, except high maquis (F5.2) with *Erica arborea* and *Arbutus* spp. and Phryganas (F7).
				F6.2 Eastern garrigue	Low, mostly evergreen sclerophyllous scrub on diverse soils through the eastern meso-, thermo- and occasionally supramediterranean belts, including around the Black Sea, where deciduous species can prevail. Derived by woodland degradation and usually maintained by grazing and fire, their structure and composition vary greatly with local climate and human impacts.	
		F6.5 Macaronesian garrigues	Should be merged with other B habitat types on shingle and gravel beaches (B1-3)			Low shrub vegetation with an open canopy, of the Canary Islands, Azores and Madeira.
		F6.6 Supra-Mediterranean garrigues		F6.6 Supra-Mediterranean garrigue	Open low scrub of calcareous soils through the western and central supramediterranean belt. Derived originally by woodland clearance and long maintained by grazing, abandonment is now allowing widespread reversion.	Low shrub formations with pronounced Mediterranean affinities formed as a degradation stage of thermophilous deciduous woodland (G1.7) or sometimes of evergreen *Quercus* woodland (G2.1) in the supra-Mediterranean belt of the Mediterranean region. Included here are only those formations that are characteristic of the supra-Mediterranean level; formations, particularly of the lower supra-Mediterranean, that are closely related to meso-Mediterranean communities have been included under F6.1, F6.2, F6.3 or F6.4.

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		F6.7 Mediterranean gypsum scrubs		F6.7 Mediterranean gypsum scrub	Open chamaephyte scrub with a lichen crust and rainy-spring annual herb flora, on gypsum-rich substrates in areas with a dry to semi-arid mediterranean climate in the Iberian peninsula. The extreme climatic and edaphic conditions maintain the habitat as naturally stable but it can bear some light grazing.	Garrigues occupying gypsum-rich soils of the Iberian peninsula, usually very open and floristically characterised by the presence of numerous gypsophilous species, among which *Gypsophila struthium, Gypsophila hispanica, Centaurea hyssopifolia, Teucrium libanitis, Ononis tridentata, Lepidium subulatum, Herniaria fruticosa, Reseda stricta, Helianthemum squamatum* . They are often rich in thymes (*Thymus*), germanders (*Teucrium*), rockroses (*Helianthemum*), composites (*Centaurea, Jurinea, Santolina*), *Frankenia.*
		F6.8 Xero-halophile scrub	Should be split into two types on the basis of geographical variation			Salt-tolerant shrub formations of dry ground in low-precipitation areas of the mediterranean zone, in particular, the Iberian peninsula and Sicily, and of the Macaronesian Islands.
				F6.8a Mediterranean halo-nitrophilous scrub	Perennial scrubby vegetation with nitrophilous and salt-tolerant associates in often artificially-disturbed places through the semi-arid thermo- and inframediterranean belts where the dry climate slows the decomposition of litter and aids precipitation of salt from the soil.	
				F6.8b Caspian Sea halo-nitrophilous scrub	Perennial scrubby vegetation with nitrophilous and salt-tolerant associates in often artificially-disturbed places around the Caspian Sea where the dry climate slows the decomposition of litter and aids precipitation of salt from the soil	
	F7 Spiny Mediterranean heaths (phrygana, hedgehog-heaths and related coastal cliff	F7.1 West Mediterranean spiny heaths	F7.1 and F7.2 should be merged and renamed			Spiny shrublands, mainly on coastal cliffs, of the western Mediterranean region.

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				F7.1 Western Mediterranean spiny heath	Low scrub of often spiny, cushion-forming plants on thin soils on wind-exposed and spray-splashed tops of rocky cliffs on Corsica, Sardinia, Pantelleria and in the Gulf of Taranto.	
		F7.2 Central Mediterranean spiny heaths	F7.1 and F7.2 should be merged and renamed			Spiny shrublands, mainly coastal, of the central Mediterranean region.
		F7.3 East Mediterranean phrygana		F7.3 Eastern Mediterranean spiny heath (Phrygana)	Low scrub dominated by thorny hemispherical chamaephytes on various base-rich and acidic substrates in the thermo-, meso- and supramediterranean belts of mainland Greece, Anatolia, the Aegean and Ionian islands, Crete, Cyprus and the north-east Mediterranean coast. Can be of primary origin or result from clearance of evergreen sclerophyll woodland.	Spiny shrublands, widespread at low and middle altitudes in the eastern Mediterranean and Anatolian regions. *Sarcopoterium spinosum* is a common dominant in the Aegean region.
		F7.4 Hedgehog-heaths	Should be renamed and split into four types on the basis of geographical variation			Primary cushion heaths of the high, dry mountains of the Mediterranean region and Anatolia, with low, cushion-forming, often spiny shrubs, in particular of genera *Acantholimon, Astragalus, Erinacea, Vella, Bupleurum, Ptilotrichum, Genista, Echinospartum, Anthyllis* , and various composites and labiates; secondary, zoogenic cushion heaths of the same regions, either downslope extensions of the high-altitude formations, and dominated by the same species, or specifically montane or steppic, often *Genista* -dominated in the Mediterranean region. Excluded are cushion-heaths of thermo-Mediterranean lowlands (F7.1, F7.2 and F7.3).
				F7.4a Western Mediterranean mountain hedgehog heath	Heath of often spiny hedgehog sub-shrubs on base-rich and acidic soils in the cold and droughty upper supra- and oromediterranean belts of the Iberian Peninsula, historically sustaining transhumance pastoralism but often extending down from crests and steep slopes due to grazing and burning.	

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				F7.4b Central Mediterranean mountain hedgehog heath	Heath of often spiny hedgehog sub-shrubs on base-rich and acidic soils in windy and sunny situations in the supra- and oromediterranean belts of Corsica, Sardinia, Elba, Sicily and the southern mainland Mountains of Italy. Downslope expansion below the timberline can follow clearance and grazing.	
				F7.4c Eastern Mediterranean mountain hedgehog heath	Heath of often spiny hedgehog sub-shrubs on mostly base-rich soils in dry mountains of the supra- and oromediterranean belts of the east Mediterranean. Downslope expansion below the timberline can follow clearance and grazing.	
				F7.4d Canarian mountain hedgehog-heath	Heath of hedgehog sub-shrubs on screes and volcanic soils in the subalpine semi-desert belt of Tenerife and la Palma.	
	F8 Thermo-Atlantic xerophytic scrub	F8.1 Canary Island xerophytic scrub		F8.1 Canary Island xerophytic scrub	Open scrub of sclerophyllous shrubs and succulent herbs on rocky substrates with skeletal soils in the arid lowlands and on deeper soils in the moister foothills of the Canary Islands.	Xerophytic scrub of the Canary Islands. Varied types include stem succulents, leaf succulents and woody sclerophyllous shrubs.
		F8.2 Madeiran xerophytic scrub		F8.2 Madeiran xerophytic scrub	Diverse scrub of sclerophyllous shrubs, small trees and succulent herbs on usually thin soils of rocky outcrops, cliffs and abandoned fields in the arid lowlands of Madeira.	Xerophytic scrub of Madeira.
	F9 Riverine and fen scrubs	F9.1 Riverine scrub	Should be split into two units based on climatic differences.			Scrub of broad-leaved willows, e.g. *Salix aurita, Salix cinerea, Salix pentandra* , beside rivers. Scrub of *Alnus* spp. and narrow-leaved willows, e.g. *Salix eleagnos* , where these are less than 5 m tall. Riverside scrub of *Hippophae rhamnoides* and *Myricaria germanica* . Excludes riversides dominated by taller narrow-leaved willows *Salix alba, Salix purpurea, Salix viminalis* (G1.1)

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				F9.1a Arctic, boreal and alpine riparian scrub	Scrub of *Salix* spp. and *Myricaria germanica* establishing on unsorted mineral sediments deposited in turbulent seasonal streams and flood-prone permanent rivers through the uplands of the arctic, boreal and alpine zones. More or less permanent where kept wet, re-establishing after seasonal flooding or succeeding to thorn scrub where the sediments stabilise.	
				F9.1b Temperate riparian scrub	Scrub of *Salix* spp developed on the mineral sediments of shoals and banks of lowland rivers through the temperate zone, re-establishing after seasonal flooding or succeeding to riparian and gallery woodland where the sediments stabilise	
		F9.2 *Salix* carr and fen scrub		F9.2 *Salix* fen scrub	Scrub dominated by various *Salix* spp. on peaty and mineral soils maintained in a permanently waterlogged state by high ground water in floodplain backwaters, around lakes and ponds, among mires and dunes, and in abandoned wet meadows and pastures, occurring through the lowlands of atlantic, boreal and continental Europe and extending into the mediterranean region at higher altitudes. Associated floras vary according to the base status of the ground waters and soils.	Low woods and scrubs colonizing fens, marshy floodplains and fringes of lakes and ponds, dominated by large or medium sized shrubby willows, generally *Salix aurita, Salix cinerea, Salix atrocinerea, Salix pentandra* , alone or in association with *Frangula alnus* , *Rhamnus cathartica, Alnus glutinosa* or *Betula pubescens* , any of which may dominate the upper canopy. In boreal regions and on cold subboreal plateaux, small shrubs may dominate, e.g. dwarf *Salix* spp. associated with *Betula humilis* or *Betula nana* . Excludes boreal and subalpine lakeside scrub on well drained soils (F2).
		F9.3 Southern riparian galleries and thickets		F9.3 Mediterranean riparian scrub	Usually open scrub of *Tamarix* spp., *Nerium oleander, Vitex agnus-castus* and similar shrubs and small trees on seasonally droughted and irregularly flooded riverbeds, streamsides and depressions through the thermo- and mesomediterranean belts.	Tamarisk, oleander, chaste tree galleries and thickets and similar low woody vegetation of permanent or temporary streams and wetlands of the thermo-Mediterranean zone and southwestern Iberia.

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	FA Hedgerows	FA.1 Hedgerows of non-native species	Not assessed	FA.1 Hedgerows of non-native species		Hedges planted with species not native in the vicinity. They may be exotics such as *Ligustrum ovalifolium* or European species outside their native range.
		FA.2 Highly-managed hedgerows of native species	Not assessed	FA.2 Highly-managed hedgerows of native species		Regularly clipped hedges composed of native species that were planted as a hedge.
		FA.3 Species-rich hedgerows of native species	Not assessed	FA.3 Species-rich hedgerows of native species		Hedgerows composed mainly of native species, with on average at least five native woody species per 25 m length, excluding undershrubs such as *Rubus fruticosus* or climbers such as *Clematis vitalba* or *Hedera helix* . In western Europe, many such hedges are thought to be medieval in origin.
		FA.4 Species-poor hedgerows of native species	Not assessed	FA.4 Species-poor hedgerows of native species		Hedgerows composed mainly of native species, not neatly clipped or obviously planted as a hedge, with on average less than five woody species per 25 m length, excluding undershrubs such as *Rubus fruticosus* or climbers such as *Clematis vitalba* or *Hedera helix* .
	FB Shrub plantations	FB.1 Shrub plantations for whole-plant harvesting	Not assessed	FB.1 Shrub plantations for whole-plant harvesting		Includes shrub nurseries. Excludes tree nurseries and plantations of Christmas trees (G5.7).
		FB.2 Shrub plantations for leaf or branch harvest	Not assessed	FB.2 Shrub plantations for leaf or branch harvest		Includes tea *Camellia sinensis* plantations, and osier *Salix viminalis* beds grown for basket-making.
		FB.3 Shrub plantations for ornamental purposes or for fruit, other than vineyards	Not assessed	FB.3 Shrub plantations for ornamental purposes or for fruit, other than vineyards		Plantations of dwarf trees, shrubs, espaliers or perennial woody climbers other than grapevines, cultivated for fruit or flower production. They include, among others, berry-bearing bushes of *Ribes* and *Rubus*
		FB.4 Vineyards	Not assessed	FB.4 Vineyards		Plantations of grapevine *Vitis vinifera* .