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TECHNICAL BACKGROUND NOTE

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This informal background document was prepared by the services of the European Commission's Directorate General for Environment for the purpose of facilitating discussions on and future use of the uniform format for national restoration plans. It does not commit the European Commission and is without prejudice to any potential future Commission Communication setting out guidance on the interpretation of the relevant provisions. It is not legally binding and does not replace, add to, or amend the provisions of applicable Union law. Only the Court of Justice of the European Union is competent to authoritatively interpret Union law.

Use of a general ecosystem typology as part of the National Restoration Plan (NRP)

Why a general ecosystem typology?

The Regulation (EU) 2024/1991 on nature restoration deals with all European ecosystems in need of restoration but does not include any definitions of these ecosystems. Some of the targets of the regulation apply to specific groups of habitat types as defined in its Annex I and II and habitats of certain species, while others apply to indicators for broad ecosystems such as agricultural and forest ecosystems. The targets of the regulation also overlap to a certain extent in terms of individual measures, e.g. restoration measures taken for certain forest habitat types under Article 4 might also benefit the indicator targets for forests ecosystems under Article 12. An ecosystem typology provides a platform for showing the synergies of measures taken under several targets for the same ecosystem and their funding needs, as well as synergies with other policies and funding instruments. Furthermore, the ecosystem typology proposed is compatible with the broad ecosystem categories used in the Prioritized Action Framework (PAF)[1], a tool to determine the funding needs of measures under the Habitats Directive. The PAF is proposed to be "integrated" in the national restoration plan (NRP) due to large overlaps and similarity in the information required. Providing the overview information on financial needs per ecosystem in the way proposed in the draft NRP format would allow that in future no separate PAFs have to be submitted to the Commission.

The typology is envisaged to be used in the national restoration plan (NRP) for structuring the financial information, for the information on measures as well as in the section on the habitats of species (terrestrial only).

A simple ecosystems typology as a coherent framework

The typology proposed (see tables below) is first of all based on the groups of habitat types that are used in Annex I (terrestrial habitat types) of the regulation but go beyond these to cover the ecosystems in their entirety. The typology is meant as a coarse grouping for practical use and therefore contains only few categories. ***While Member States have freedom in their interpretation of these categories, the Commission and the European Environment Agency (EEA) were asked by some Member States to provide further clarifications on the typology and its definitions.*** *In particular, the*

[1] The PAF categories were based on the MAES typology at the time, which is now further developed into the EU typology for ecosystem accounting (under Regulation (EU) 2024/3024, amending Regulation 691/2011 on environmental-economic accounting).

ecological definition of the category "urban ecosystems" is without prejudging the spatial determination of urban ecosystem areas by Member States pursuant to Article 14(4) of the Regulation (EU) 2024/1991 on nature restoration.

The terrestrial groupings of habitat types in Annex I of the regulation were taken as the starting point for the typology proposed, while other existing typologies, like the recently developed EU ecosystem typology, can be of help to define the different, more broad ecosystems that include these Annex I groupings. ***Table 1*** shows the proposed ecosystem typology for the NRP and its direct relationship with the NRR annexes I & II, the PAF categories and the (primarily) level 1 ecosystem types of the recently developed EU ecosystem typology for ecosystem accounting. This typology serves as the basis for reporting of EU Member States under the recently adopted amendment of Regulation 691/2011 which introduces a module on ecosystem accounting in the EU statistical system. This EU ecosystem typology will be used for the forthcoming second EU ecosystem assessment, including underpinning EU-level ecosystem accounts. It is thus integrated here as key reference classification. The full typology (which has three levels of sub-division) is documented in a technical guidance document, co-developed between Eurostat, the EEA and statistical offices of EU Member States. It can be found here: 265ef6e5-b146-e501-499a-d1467f7a6a90

Table 2 provides brief definitions of the ecosystem types proposed. Please note that for the marine ecosystem no sub-categorisation is proposed to keep the NRP ecosystem typology as simple as possible. Further details on ecological definitions can be provided on request (building on the class definitions in the EU ecosystem typology and EUNIS).

For further support, a comprehensive database assigning individual species and habitat types of EU importance (Habitats Directive) to eight broad ecological groups is available for download from the EEA website: (https://www.eea.europa.eu/data-and-maps/data/linkages-of-species-and-habitat#tab-european-data).

A note on separating marine, coastal and terrestrial ecosystems

A clear geo-spatial solution is needed for setting the boundary between terrestrial and marine ecosystems. There are two cases to consider here:

Case a) concerns the separation of the NRP type 'Rocky, dune and sparsely vegetated ecosystems' from coastal Wetland ecosystems (and potentially Marine ecosystems in rare cases). In this case it is recommended to use the 'EEA coastline for analysis'[2]. The 'EEA coastline for analysis' is the spatial data set on coastline used across the marine reference data sets for harmonized European products (EEA38-related). This coastline addresses, to the extent possible, the ecological requirements of the NRR and is derived from best available EU-wide and global data and satellite imagery, to demarcate the highest visible level of water (relating to average high tide level where relevant), so that tidal mudflats and submerged coastal rocks are excluded from the permanent landmass. The EEA coastline product also includes a saltwater/freshwater boundary across estuaries.

This data set is recommended for use by Eurostat and EEA in reporting under the new EU ecosystem accounting module. It was developed in the MSFD context and is aligned with the needs of the Nature

[2] https://sdi.eea.europa.eu/catalogue/srv/eng/catalog.search#/metadata/9faa6ea1-372a-4826-a3c7-fb5b05e31c52

directives (e.g. inclusion of certain islands in the context of Natura 2000) and Water Framework Directive (e.g. inclusion/exclusion of certain coastal water bodies).

Case b) concerns the separation of the NRP type coastal Wetland ecosystems from Marine ecosystems at the seaward boundary of coastal wetlands, specifically for estuaries, mudflats and sandflats not covered by seawater at low tide, and coastal lagoons. In this case the WFD transitional waters layer can potentially be used to identify the seaward boundary of such coastal wetlands.

However, in both cases it is up to Member States to use other national (potentially more detailed) definitions of their coastline and/or coastal waters.

Table 1:

General ecosystem typology (NRP)	*Annex I & II NRR – ecosystem grouping*	Relation with PAF-categories	*Link to EU ecosystem typology*
Wetland ecosystems (coastal and inland)	Wetlands (coastal and inland)	*Bogs, mires, fens and other wetlands*	*Inland wetlands (ET7), Coastal marshes and salines (ET11.4), Marine inlets and transitional waters (ET10); in addition, associated habitats from other Level 1 ecosystem types, in particular Level 3 sub-type 4.1.2 Broadleaved swamp forest on non-acid and acid peat and the wet component of Level 3 sub-type 5.2.3 Temperate shrub heathland*
Grassland ecosystems	Grasslands and other pastoral habitats	*Grasslands*	*Grassland (ET3) & components of Level 3 sub-type 5.2.3 Temperate shrub heathland*
Rivers, lakes, alluvial, riparian ecosystems	River, lake, alluvial and riparian habitats	*Freshwater habitats (rivers and lakes)*	*Rivers and canals (ET8) & Lakes and reservoirs (ET9); in addition, associated habitats from other Level 1 ecosystem types, in particular Level 3 sub-type 4.1.1 Riparian forest and woodland and a component of Level 3 sub-type 3.2.3 Seasonally wet and wet grassland*
Forests and woodland ecosystems	Forests	*Woodlands and forests*	*Forest and woodland (ET4), except level 3 sub-types 4.1.1 and 4.1.2*
Heath, shrub and scrub ecosystems	Steppe, heath and scrub habitats	*Heathlands and shrubs*	*Heathland and shrub (ET5, except parts of sub-type 5.2.3)*
Rocky, dune and sparsely vegetated ecosystems	Rocky and dune habitats	*Rocky habitats, dunes & sparsely vegetated lands*	*Sparsely vegetated ecosystems (ET6) and Coastal beaches, dunes and wetlands (ET11) except ET11.4; in addition, parts of Level 3 sub-type 5.2.3 Temperate shrub heathland*
Cropland ecosystems	-	*Other agro-ecosystems (incl. croplands)*	*Cropland (ET2)*
Urban ecosystems	-	-	*Settlements and other artificial areas (ET1)*
Marine ecosystems	All marine habitat type groups of Annex II	*Marine and coastal waters*	*Marine ecosystems (ET12)*
Others	-	*Others (caves, etc.)*	*n/a*

Table 2:

General ecosystem typology (NRP)	***Ecological/thematic definition (intended for guidance only, non-binding for Member States)***
Wetland ecosystems (coastal and inland)	*Inland wetlands are areas that are year-round or seasonally strongly affected by water, in the form of temporary flooding or groundwater levels close to surface. This class includes natural, semi-natural or modified inland marshes as well as mires, bogs and fens, plus small temporary water bodies (such as seasonal ponds).* *Coastal wetland ecosystems include coastal saltmarshes (i.e. vegetated low-lying areas in the coastal zone, mostly above the high-tide line, but always susceptible to flooding by seawater) and salines (i.e. salt-pans for extraction of salt from salt water by evaporation).* *NRR annex I also includes estuaries, mudflats and sandflats (not covered by seawater at low tide) and coastal lagoons. These correspond to ET10 'Marine inlets and transitional waters': these are habitats on the land-water interface under the influence of tides and with salinity higher than 0.5 ‰.*
Grassland ecosystems	*Grassland ecosystems cover areas dominated by herbaceous vegetation (mostly grasses and forbs but also containing other herbaceous and woody plant species adapted to grazing, mosses and lichens) frequently used for feeding domestic livestock. It consists of three main sub-types:* *a) modified grasslands (recently sown as well as intensively used permanent grasslands used for grazing or hay and silage production),* *b) semi-natural and natural grasslands, which historically were often grazed and are linked to extensive agricultural practices in the case of semi-natural grasslands,* *c) a substantial range of other pastoral habitats, such as certain heathland types and agroforestry areas often used for grazing, such as cork and holm oak stands or wooded pasture.*
River, lake, alluvial, riparian ecosystems	*This ecosystem comprises two main types:* *a) permanent and temporary freshwater inland surface waters of linear character (rivers and canals). These include natural water courses, such as rivers, streams etc., as well as anthropogenic structures built for transportation, drainage or water supply purposes, i.e., canals, ditches etc.* *b) permanent freshwater inland surface waters composed of primarily non-linear water bodies (lakes and reservoirs). These include natural water bodies as well as anthropogenic water bodies developed mainly for water supply or energy generation purposes.* *Riparian and alluvial habitats in direct connection with these surface waters are also covered here.*
Forest and woodland ecosystems	*Forests and woodlands include tree-dominated ecosystems with a canopy cover generally over 30% (in the temperate climate zone) or 10% (in boreal and Mediterranean climate zones) or vegetation where present trees can reach these thresholds in situ. There is a wide variety of different forest habitat types, including coniferous, broad-leaved, lauriphyllous and mixed forest types.*

General ecosystem typology (NRP)	*Ecological/thematic definition (intended for guidance only, non-binding for Member States)*
Heath, shrub and scrub ecosystems	*Heathland and shrub are areas with vegetation dominated by shrubs or dwarf shrubs, which may include dispersed trees with a canopy cover below 30%. This ecosystem type includes natural ecosystems of predominantly harsh conditions (e.g. tundra, salt steppes or pre-desert scrub) as well as semi-natural vegetation types influenced by extensive human use, mainly low-density grazing. The class includes grassy, shrubby and sclerophyllous vegetation.*
Rocky, dune and sparsely vegetated ecosystems	*Sparsely or unvegetated ecosystems have a low density of vegetation, with typically at least 70% of barren soil. They include degraded sparsely or degraded non-vegetated areas as well as ecosystems under extreme natural conditions which may have been traditionally grazed. They include bare rocks, glaciers, inland dunes and sand plains.* *They frequently occur in coastal areas with low productivity and marine influences, such as salt spray. Key examples are beaches, sea dunes or rocky shores. They lie above the standard tideline but may be flooded during high tide or extreme sea surges.*
Cropland ecosystems	*Croplands are sown or planted agro-cultural areas including intensively managed cropland, extensively managed cropland, market gardening and multifunctional areas. They include areas with permanent, perennial and annual crops, and agro-ecosystems with significant coverage of natural vegetation (agricultural mosaics). Cropland ecosystems include agro-forestry areas such as cork and holm oak stands under arable use.*
Urban ecosystems	*This ecosystem type represents urban settlement areas, i.e. ecosystems that are strongly modified by people and that are characterised by buildings, other man-made structures and vegetation or aquatic elements created or modified by human intervention. It includes dispersed and dense residential, industrial, commercial, and transport areas, urban green areas, parks, small ponds etc.*
Marine ecosystems	*This ecosystem includes all marine areas in the sea extent at low tide level or below mean sea level. This ranges from near-shore ecosystems to deep water marine ecosystems. This ecosystem type includes the whole water column including the seabed and the pelagic zone.*
Others	*Sub-terranean habitats and other habitats not covered above (option for Member States to describe one more type).*