

Assessment of Land Use Impacts on the Natural Environment

Appendix: CORINE Plus land-cover definitions

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Classification of land-cover types according to (European Environmental Agency 2000) modified by Koellner (2003) and extended to CORINE Plus. *Italic entries indicate additional types, not included in the original CORINE version.*

Type		Description (type of intensity)
1 Artificial surfaces		
10 Built up land		Land is totally covered with buildings or artificial infrastructure. (artificial_hi)
11 Urban fabric	111 Continuous urban fabric	Buildings cover most of the land. Roads and artificially surfaced area cover almost all the ground. Non-linear areas of vegetation and bare soil are exceptional. At least 80% of the total area is sealed. (artificial_hi)
	112 Discontinuous urban fabric	Most of the land is covered by structures. Buildings, roads and artificially surfaced areas associated with areas with vegetation and bare soil, which occupy discontinuous but significant surfaces. Less than 80% of the total area is sealed. (artificial_hi)
	<i>113 Urban fallow</i>	Remains of demolished houses are removed and areas are leveled. (non-use)
	<i>114 Rural settlement</i>	Village with buildings, streets and gardens. (artificial_li)
12 Industrial, commercial and transport	121 Industrial or commercial units	Artificially surfaced areas (with concrete, asphalt, tamacadam, or stabilized, e.g. beaten earth) devoid of vegetation occupy most of the area in question, which also contain buildings and/or areas with vegetation. (artificial_hi)
	<i>121a Industrial area built up part</i>	Land is totally covered with industrial buildings or infrastructure. (artificial_hi)
	<i>121b Industrial area part with vegetation</i>	High or medium proportion of sealed area; open soils, sometimes contaminated with chemicals. (artificial_hi)
	122 Road and rail networks and associated land	Motorways, railways, including associated installations (stations, platforms, embankments). Minimum width to include: 100 m.
	<i>122a Road networks</i>	Road networks. (artificial_hi)
	<i>122b Road embankments and associated land</i>	Road embankments and associated land. (artificial_li)
	<i>122c Rail networks</i>	Rail networks. (artificial_hi)
	<i>122d Rail embankments and associated land</i>	Rail embankments and associated land. (artificial_li)
	<i>122e Rail fallow</i>	Fallow land with spontaneous vegetation. (non-use)
	123 Port areas	Infrastructure of port areas, including quays, dockyards and marinas. (artificial_li)
	124 Airports	Airport installations: runways, buildings and associated land. (artificial_li)
	<i>125 Industrial fallow</i>	Areas with remains of industrial buildings; deposits of rubble, gravel, sand and industrial waste. (non-use)
13 Mine, dump and construction sites	131 Mineral extraction sites	Areas with open-pit extraction of industrial minerals (sandpits, quarries) or other minerals (opencast mines). Includes flooded gravel pits, except for riverbed extraction. (artificial_hi)
	132 Dump sites	Landfill or mine dump sites, industrial or public. (artificial_hi)
	133 Construction sites	Spaces under construction development, soil or bedrock excavations, earthworks. (artificial_hi)
	134 Mining fallow	Levelled deposits of slag heaps, rubble, gravel and sand. (non-use)
14 Artificial, non-agricultural areas with vegetation	141 Green urban areas	Areas with vegetation within urban fabric. Includes parks and cemeteries with vegetation. (artificial_li)
	142 Sport and leisure facilities	Camping grounds, sports grounds, leisure parks, golf courses, racecourses, etc. Includes formal parks not surrounded by urban zones. (artificial_li)
2 Agricultural areas		
21 Arable land		Cultivated areas regularly ploughed and generally under a rotation system.
	211 Non-irrigated arable land	Cereals, legumes, fodder crops, root crops and fallow land. Includes flower and tree (nurseries) cultivation and vegetables, whether open field, under plastic or glass (includes market gardening). Includes aromatic, medicinal and culinary plants. Excludes permanent pastures.
	<i>211a Intensive</i>	Chemical-synthetic and organic fertilizer as well as pesticides are applied. (agri_hi)
	<i>211b Integrated</i>	Chemical-synthetic and organic fertilizer as well as pesticides are applied. However, the input of these substances is reduced. 21121 Wheat, 21122 Maize (agri_hi)

Type		Description (type of intensity)
	211c Organic	Chemical-synthetic fertilizer and pesticides are not allowed, organic fertilizer is applied. (agri_hi)
	211d Fibre/energy crops	Crops for fibre and energy production: Kenaf (<i>Hibiscus cannabinus</i> L.), Hemp (<i>Cannabis sativa</i> L.), Chinese reed (<i>Miscanthus</i> sp.). (agri_hi)
	211e Agricultural fallow	Agricultural fallow. (non-use)
	211f Artificial meadow	Artificial meadow in rotation system. (agri-hi)
	212 Permanently irrigated land	Crops irrigated permanently and periodically, using a permanent infrastructure (irrigation channels, drainage network). Most of these crops could not be cultivated without an artificial water supply. Does not include sporadically irrigated land. (agri_hi)
	213 Rice fields	Land developed for rice cultivation. Flat surfaces with irrigation channels. Surfaces regularly flooded. (agri_hi)
22 Permanent crops		Crops not under a rotation system which provide repeated harvests and occupy the land for a long period before it is ploughed and replanted: mainly plantations of woody crops. Excludes pastures, grazing lands and forests.
	221 Vineyards	Areas planted with vines.
	221a Intensive	Intensive vineyards. (agri_hi)
	221b Organic	Organic vineyards. (agri_li)
	222 Fruit trees and berry plantations	Parcels planted with fruit trees or shrubs: single or mixed fruit species, fruit trees associated with permanently grassed surfaces. Includes chestnut and walnut groves.
	222a Intensive orchards	Orchards with small growing fruit trees. (agri_hi)
	222b Organic orchards	Orchards with meadows and large fruit trees. (agri_li)
	223 Olive groves	Areas planted with olive trees, including mixed occurrence of olive trees and vines on the same parcel.
23 Pastures and meadows	231 Pastures and meadows	Dense, predominantly graminoid grass cover, of floral composition, not under a rotation system. Mainly used for grazing, but the fodder may be harvested mechanically. Includes areas with hedges (bocage), e.g. oat grass meadow (<i>Arrhenatherion</i> , <i>Polygono</i>), fertilized moist meadow (<i>Calthion</i>).
	231a Intensive pasture and meadows	Meadows mechanically harvested 3 times or more per year, fertilizer applied, perhaps on former arable land. (agri_hi)
	231b Less intensive pasture and meadows	Meadows mechanically harvested 2 or 3 times per year, reduced input of fertilizer, perhaps on former arable land. (agri_li)
	231c Organic pasture and meadows	Meadows mechanically harvested 1 time per year, no fertilizer, perhaps on former arable land. (agri_li)
24 Heterogeneous agricultural areas	241 Annual crops associated with permanent crops	Non-permanent crops (arable lands or pasture) associated with permanent crops on the same parcel.
	242 Complex cultivation	Juxtaposition of small parcels of diverse annual crops, pasture and/or permanent crops.
	243 Land principally occupied by agriculture	Areas principally occupied by agriculture, interspersed with significant natural areas. (agri_li)
	244 Agro-forestry areas	Annual crops or grazing land under the wooded cover of forestry species. (agri_li)
	245 Agricultural fallow with hedgerows	Agricultural fallow with hedgerows. (non-use)
3 Forests and semi-natural areas		
31 Forests	311 Broad-leaved forest	Vegetation formation composed principally of trees, including shrub and bush under-stories, where broad-leaved species predominate. (Presence of conifers 0–10%)
	311a Broad leaved plantations	Plantations of fast growing tree species like poplar. (forest_hi)
	311b Semi-natural broad-leaved forests	Natural or semi-natural forests, where broad-leaved species predominate, either moist or arid form. (forest_li)
	312 Coniferous forest	Vegetation formation composed principally of trees, including shrub and bush under-stories, where coniferous species predominate. (Presence of conifers 91–100%)
	312a Coniferous plantations	Plantations of fast growing tree species like <i>Picea abies</i> . (forest_hi)
	312b Semi-natural coniferous forests	Natural or semi-natural forests, where coniferous species predominate. (forest_li)
	313 Mixed forest	Vegetation formation composed principally of trees, including shrub and bush under-stories, where broad-leaved and coniferous species co-dominate. (forest_li)

Type		Description (type of intensity)
	313a <i>Mixed broad-leafed forest</i>	Forests with presence of conifers 11–50%. (forest_li)
	313b <i>Mixed coniferous forest</i>	Forests with presence of conifers 51–90%. (forest_li)
	313c <i>Mixed plantation</i>	Intensively managed plantations with short rotation cycle with broad-leafed and coniferous trees. (forest_hi)
	314 <i>Forest Edge</i>	Borderline between silvicultural and agricultural area. (non-use)
32 Shrub and/or herbaceous vegetation associations	321 <i>Semi-Natural grassland</i>	Low productivity grassland. Often situated in areas of rough uneven ground. Frequently includes rocky areas, briars, and heath land., e.g. xeric grassland (Xero-Bromium), mesoxeric grassland (Meso-Bromium), mat-grass pasture (Violion), moor-grass meadow (Molinion). (agri_li)
	322 <i>Moors and heath land</i>	Vegetation with low and closed cover, dominated by bushes, shrubs and herbaceous plants (heath, briars, broom, gorse, laburnum, etc.). (non-use)
	323 <i>Sclerophyllous vegetation</i>	Bushy sclerophyllous vegetation. Includes maquis and garrigue. Maquis: a dense vegetation association composed of numerous shrubs associated with siliceous soils in the Mediterranean environment. Garrigue: discontinuous bushy associations of Mediterranean calcareous plateaus. Generally composed of kermes oak, arbutus, lavender, thyme, cistus, etc. May include a few isolated trees. (non-use)
	324 <i>Transitional woodland/shrub</i>	Bushy or herbaceous vegetation with scattered trees. Can represent either woodland degradation or forest regeneration/colonization. (non-use)
	325 <i>Hedgerows</i>	Bushy or herbaceous vegetation with scattered trees at the edge of fields. (non-use)
33 Open spaces with little or no vegetation	331 <i>Beaches, dunes, and sand plains</i>	Beaches, dunes and expanses of sand or pebbles in coastal or continental areas, including beds of stream channels with torrential regime. (non-use)
	332 <i>Bare rock</i>	Scree, cliffs, rocks and outcrops. (non-use)
	333 <i>Sparsely vegetated areas</i>	Includes steppes, tundra and badlands. Scattered high-altitude vegetation. (non-use)
	334 <i>Burnt areas</i>	Areas affected by recent fires, still mainly black. (non-use)
	335 <i>Glaciers and perpetual snow</i>	Land covered by glaciers or permanent snowfields. (non-use)
4 Wetlands		
41 <i>Inland wetlands</i>		Non-forested areas partially, seasonally or permanently waterlogged. The water may be stagnant or circulating. (non-use)
	411 <i>Inland marshes</i>	Low-lying land usually flooded in winter, and more or less saturated by water all year round. (non-use)
	412 <i>Peat bogs</i>	Land consisting mainly of decomposed moss and vegetable matter. May or may not be exploited. e.g. raised bog (Sphagnetum), intermediate mires (e.g. Scheuchzerietum) and fens (Caricetum). (non-use)
42 <i>Coastal wetlands</i>		Non-wooded areas tidally, seasonally or permanently waterlogged with brackish or saline water.
	421 <i>Salt marshes</i>	Low-lying areas with vegetation, above the high-tide line, susceptible to flooding by seawater. Often, in the process of filling in, gradually being colonized by halophilic plants.
	422 <i>Salines</i>	Salt pans, active or in process. Sections of salt marsh exploited for the production of salt by evaporation. They are clearly distinguishable from the rest of the marsh by their segmentation and embankment systems.
	423 <i>Intertidal flats</i>	Generally unvegetated expanses of mud, sand or rock lying between high and low watermarks. On contour on maps.
5 Water bodies		
51 <i>Inland waters</i>	511 <i>Water courses</i>	Natural or artificial watercourses serving as water drainage channels. Includes canals. Minimum width to include: 100 m.
	512 <i>Water bodies</i>	Natural or artificial stretches of water.
	512a <i>Artificial lakes</i>	Reservoir in a valley because of damming up rivers.
	512b <i>Natural lakes</i>	Natural water bodies frequently because of former existence of glaciers.
52 <i>Marine waters</i>	521 <i>Coastal lagoons</i>	Unvegetated stretches of salt or brackish waters separated from the sea by a tongue of land or other similar topography. These water bodies can be connected with the sea at limited points, either permanently or for parts of the year only.
	522 <i>Estuaries</i>	The mouth of a river within which the tide ebbs and flows.
	523 <i>Sea and ocean</i>	Zone seaward of the lowest tide limit.