Flora and plant communities across a complex network of heavily modified water bodies: local geographical patterns, land use and hydrochemical drivers

Irene Montanari(1)(2), Nicola De Bernardini(3), Gina Gizzi(1), Rossano Bolpagni(4)(5), Fabrizio Buldrini(1)*, Louise Campione(1), Ilenia Castellari(1), Sara Landi(1)(5), Luigi Spiezia(1), Alessandro Chiarucci(1)

(1) BIOME Lab - Department of Biological, Geological and Environmental Science, University of Bologna. Via Irnerio 42, 40126 Bologna.

(2) Regional Agency for Prevention, Environment and Energy of Emilia-Romagna (Arpae Emilia-Romagna). Via Po 5, 40100 Bologna.

(3) Department of Biology, University of Padova. Via U. Bassi 58/b, 35121 Padova

(4) Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma. Viale delle Scienze 11/a, 43124 Parma.

(5) GREENARCO S.r.l., Spin-Off of the University of Bologna. Viale Giuseppe Fanin 48, 40127 Bologna.

* Corresponding author: <u>fabrizio.buldrini@unibo.it</u>

Acronym	Description	Acronym	Description
Aa	Aquaculture in the continental environment	Ro	Photovoltaic systems
Fs	Airports for sports flights and heliports	It	Technological systems
Cl	Other wood crops	Iz	Agro-zootechnical settlements
Av	Riverbeds of rivers and streams with abundant vegetation	Ic	Commercial settlements
Af	Riverbeds of rivers and streams with poor vegetation	Is	Service establishment
Ze	Areas with important agricultural crops and natural areas	Io	Hospital settlements
Qa	Active extractive areas	Ia	Production sites
Qi	Inactive extractive areas	Vi	Racecourses
Vx	Uncultivated urban areas	Со	Olive groves
Vs	Sport areas	Vp	Parks
Rv	Green areas associated with roads	Vd	Leisure parks
Ar	Banks	Ср	Poplar crops
Va	Racetraks	Рр	Meadows
Ra	Highways and expressways	Rf	Rail networks
Ax	Artificial basins	Re	Energy distribution and production networks
Br	Ruderal thickets	Ri	Networks for water distribution
Bq	Oak, hornbeam and chestnut forests	Rs	Road networks
Bs	Predominantly willow and poplar forests	Та	Recent reforestation
Bm	Mixed coniferous and broad-leaved forests	Sn	Non-irrigated arable land
Вр	Plain forests with a prevalence of farnies and ash trees	Se	Irrigated plain arable land
Vt	Camping and tourist accommodation	Zo	Complex crop and particle systems
Vg	Golf courses	Es	Isolated residential facilities
Ac	Canals and waterways	Qs	Modified soils and artifacts
Qc	Construction sites and excavations	Er	Sparse residential fabric
Vm	Cemeteries	Ec	Compact and dense residential fabric
So	Horticultural crops	Ed	Urban residential fabric
Zt	Temporary crops combined with permanent crops	Tn	Evolving shrubby and arboreal vegetation
Qr	Salvage yards	Cv	Vineyards
Qu	Landfill of municipal solid waste	Vv	Villas
Qq	Landfills and deposits of quarries, mines & industries	Sv	Nurseries
Cf	Fruit trees	Ui	Inland wetlands
Rm	Marshalling yards		

Supplementary material 1 Land use categories cited in this study (classification follows Corine Land Cover IV)