

**Table S1.** Urban river Ecosystem Services Classification according to CICES 5.1. Author's work adapted from Haines-Young and Potschin [21] and Maes et al. [34,35]

Section	Division	Group	Class	Indicator
Provisioning (Biotic)	Biomass	Cultivated terrestrial plants for nutrition, materials or energy	Cultivated terrestrial plants (including fungi, algae) grown for nutritional purposes	- Production of food (ton ha <sup>-1</sup> year <sup>-1</sup> ) - Surface of community gardens/small plots for self-consumption (ha)
		Wild plants (terrestrial and aquatic) for nutrition, materials or energy	Wild plants (terrestrial and aquatic, including fungi, algae) used for nutrition	- Wild plants used in gastronomy, cosmetic, pharmaceutical uses (data on industries collecting the plants)
			Fibres and other materials from wild plants for direct use or processing (excluding genetic materials)	
		Reared aquatic animals for nutrition, materials or energy	Animals reared by in-situ aquaculture for nutritional purposes	- Freshwater aquaculture production (e.g. sturgeon and caviar production)
			Fibres and other materials from animals grown by in-situ aquaculture for direct use or processing (excluding genetic materials)	
			Animals reared by in-situ aquaculture as an energy source	
		Wild animals (terrestrial and aquatic) for nutrition, materials or energy	Wild animals (terrestrial and aquatic) used for nutritional purposes	- Fish production (catch in tons by commercial and recreational fisheries) - Number of fisherman and hunters of waterfowls (anglers, professional and amateur fishermen) - Status of fish population (Species composition, Age Structure, Biomass kg/ha)

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Regulation & Maintenance (Biotic)	Transformation of biochemical or physical inputs to ecosystems	Mediation of wastes or toxic substances of anthropogenic origin by living processes	Bio-remediation by micro-organisms, algae, plants, and animals	- Indicators on water quality (microbiological data for bathing waters, BOD5 nitrate conc, phosphate conc, oxygen conditions, saprobiological status)
			Filtration/sequestration/storage/accumulation by micro-organisms, algae, plants, and animals	- Nutrient loads - Ecological status - Trophic status - Area occupied by riparian forests - Number and efficiency of treatment plants - Waste treated - Pollutants removed by vegetation (in leaves, stems and roots) ( $\text{kg ha}^{-1} \text{ year}^{-1}$ ) - Dry deposition velocity ( $\text{mm s}^{-1}$ ) - Population exposed to high concentration of pollutants (% on surface area)
		Mediation of nuisances of anthropogenic origin	Noise attenuation	- Leaf Area Index + distance to roads (m) - Noise reduction rates applied to UGI within a defined road buffer $\text{dB(A) m}^{-2}$ vegetation unit (Derkzen et al. 2015)
	Regulation of physical, chemical, biological conditions	Regulation of baseline flows and extreme events	Buffering and attenuation of mass movement	- Sediment retention
			Hydrological cycle and water flow regulation (Including flood control, and coastal protection)	- Hydrological flow data - Share of green areas in zones in danger of floods (%) - Population exposed to flood risk (% per unit area) - Areas exposed to flooding (ha) - Holding capacity flood risk maps - Conservation of river and lakes banks
		Lifecycle maintenance, habitat and gene pool protection	Pollination (or 'gamete' dispersal in a marine context)	- Capacity of ecosystems to sustain insect pollinators activity (dimensionless) (Zulian et al. 2013) - Relative abundance (number over area or over length)
		Lifecycle maintenance, habitat and gene pool protection	Maintaining nursery populations and habitats (Including gene pool protection)	- Biodiversity value (Species diversity or abundance, endemics or red list species and spawning location) - Ecological status Morphological status

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Regulation & Maintenance (Biotic)	Regulation of physical, chemical, biological conditions	Lifecycle maintenance, habitat and gene pool protection	Maintaining nursery populations and habitats (Including gene pool protection)	- Biodiversity value (Species diversity or abundance, endemics or red list species and spawning location) - Ecological status Morphological status
		Pest and disease control	Pest control (including invasive species)	- Alien species (Introduced riparian and aquatic plants - Number of introduced aquatic invertebrates - Number of introduced vertebrates in rivers and riparian areas
		Regulation of soil quality	Weathering processes and their effect on soil quality	- Fluvisols surface
		Water conditions	Regulation of the chemical condition of freshwaters by living processes	- Chemical status - Ecological status
		Atmospheric composition and conditions	Regulation of chemical composition of atmosphere and oceans	- C sequestration (Annual increase in - Carbon sequestration in living biomass of riparian forest - Carbon sequestered by plantations of Populus - Organic carbon stored in fluvisols)
			Regulation of temperature and humidity, including ventilation and transpiration	- Leaf Area Index - Temperature decreases by tree cover ( $^{\circ}\text{C m}^{-2}$ ) - Cooling capacity of UGI - Population exposed to high temperatures (% per unit area)
Cultural (Biotic)	Direct, in-situ and outdoor interactions with living systems that depend on presence in the environmental setting	Physical and experiential interactions with natural environment	Characteristics of living systems that enable activities promoting health, recuperation or enjoyment through active or immersive interactions	- Number of visitors (to National Parks including lakes or rivers) - National Parks and Natura 2000 sites - Known bird watching sites Waterfowl
			Characteristics of living systems that enable activities promoting health, recuperation or enjoyment through passive or observational interactions	- Number of visitors - bathing areas and Number beaches - Fishing reserves - Fish abundance - Fish monetary value from angling - Number fishing licenses - Quality of fresh waters for fishing

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Cultural (Biotic)	Direct, in-situ and outdoor interactions with living systems that depend on presence in the environmental setting	Intellectual and representative interactions with natural environment	Characteristics of living systems that enable scientific investigation or the creation of traditional ecological knowledge	- Monitoring sites (by scientists) - Number of scientific projects, articles, studies - Classified sites (world heritage, label European tourism)
			Characteristics of living systems that enable education and training	- Number of visitors - National Parks and Natura 2000 sites
			Characteristics of living systems that are resonant in terms of culture or heritage	- Number of visitors - Natural heritage and cultural sites - Number of annual cultural activities organized
			Elements of living systems used for entertainment or representation	- Number of visitors (surface or number of wetlands located next to a bike path)
			Characteristics of living systems that enable aesthetic experiences	- Number of visitors - Contrasting landscapes (lakes close to mountains) - Proximity to urban areas of scenic rivers or lakes
	Indirect, remote, often indoor interactions with living systems that do not require presence in the environmental setting	Spiritual, symbolic and other interactions with natural environment	Elements of living systems that have symbolic meaning	- National species or habitat types
			Elements of living systems that have sacred or religious meaning	- sacred/religious sites (catastrophic events, religious places)
		Other biotic characteristics that have a non-use value	Characteristics or features of living systems that have an existence value	- Number of visitors (to National Parks including lakes) - Number of fishing licenses
			Characteristics or features of living systems that have an option or bequest value	- Number of association registered on animals, plants, environment, naturism
Provisioning (Abiotic)	Water	Surface water used for nutrition, materials or energy	Surface water for drinking	- Drinking water provision ( $\text{m}^3 \text{ ha}^{-1} \text{ year}^{-1}$ ) - Drinking water consumption ( $\text{m}^3 \text{ year}^{-1}$ ) - Surface water availability - Water abstracted
			Surface water used as a material (non-drinking purposes)	- Water provision ( $\text{m}^3 \text{ ha}^{-1} \text{ year}^{-1}$ ) - Water consumption per sector ( $\text{m}^3 \text{ year}^{-1}$ ) - Surface water availability - Water abstracted - Volume of water bodies