



Ramsar Convention Typology of Wetlands

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Abstract

The Ramsar Convention's typology of wetlands was adopted in 1990 along with an information sheet for describing Ramsar sites. The typology was loosely based on the Classification of Wetlands and Deepwater Habitats of the United States and referred to the definition of wetlands adopted by the Convention in 1972. Given the breadth of the definition the classification covers a wider range of wetland types than many others. The typology comprises three broad groups of wetlands: marine and coastal; inland; and human-made. Within each group, there are a number of types, totalling 42 in all. The purpose of the typology is to provide a broad framework to assist in the rapid identification of the main wetland habitats represented at each Ramsar site.

Keywords

Wetland classification · Wetland typology · Ramsar

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Introduction

Scott and Jones (1995) have described the development of the Ramsar Convention's typology of wetlands. It was formulated by Scott (1989) as one component of an initiative to describe the features of wetlands listed as internationally important (Ramsar sites) under the Convention. It was adopted by the Convention in 1990 along with an information sheet for describing Ramsar sites. The typology was loosely based on the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and referred to the definition of wetlands adopted by the Convention in 1972, namely "... wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 m." Given the breadth of the definition the classification covers a wider range of wetland types than many others.

The Ramsar definition was purposefully broad in an effort to embrace all the "wetland" habitats of migratory water birds given the emphasis on such species in the negotiations that led to the drafting of the text of the Convention (Matthews 1993). Hence, it includes marine water less than 6 m deep at low tide, which, in northern latitudes, are often important wintering habitats for loons (divers), grebes, and sea ducks. It also includes artificial wetlands, such as reservoirs and seasonally flooded agricultural land, which are often important habitats for ducks, geese, cranes, and shorebirds. Similarly, a large part of the world's coral reefs and seagrass meadows qualify as wetlands. On a number of subsequent occasions, the coverage of wetland types was extended, for example, to incorporate karst wetlands and caves.

The Typology

The current version of the Ramsar typology recognizes three broad groups of wetlands: marine and coastal; inland; and human-made. Within each group, there are a number of types with codes that are used in the Ramsar Information Sheet when describing Ramsar sites. The purpose of the typology is to provide a broad framework to assist in the rapid identification of the main wetland habitats represented at each site. Within each grouping, a number of wetland types have been determined on the basis of settings (e.g., palustrine or riverine), water permanence (e.g., permanent, seasonal or intermittent), soils, substrates and vegetation. The typology contains 12 marine and coastal, 20 inland, and 10 human-made wetland types (Table 1).

Semeniuk and Semeniuk (1997) in a review of the Inland Wetland component of the typology noted that mixed criteria were used to separate the wetlands, and that not all natural inland wetlands had been unambiguously addressed. For instance, there was repetition of types named as "marshes" and some types were ill-defined in that they encompassed a number of types (e.g., Alpine/tundra wetlands encompass bogs, meadows, and other mires). The mixed criteria included some that were generic (such as geothermal); some that were climatic, physiographic, or vegetational; and others that were vegetative in conjunction with hydroperiod and soil

Table 1 Ramsar typology of wetlands

Wetland category	Code	Wetland type
Marine/ coastal	A	Permanent shallow marine waters in most cases less than 6 m deep at low tide; includes sea bays and straits
	B	Marine subtidal aquatic beds; includes kelp beds, seagrass beds, tropical marine meadows
	C	Coral reefs
	D	Rocky marine shores; includes rocky offshore islands, sea cliffs
	E	Sand, shingle, or pebble shores; includes sand bars, spits, and sandy islets; includes dune systems and humid dune slacks
	F	Estuarine waters; permanent water of estuaries and estuarine systems of deltas. Intertidal mud, sand, or salt flats
	G	Intertidal marshes; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes
	H	Intertidal forested wetlands; includes mangrove swamps, nipah swamps, and tidal freshwater swamp forests
	I	Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea
	J	Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea
	K	Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea
	Zk(a)	Karst and other subterranean hydrological systems, marine/coastal
	Inland ^a	L
M		Permanent rivers/streams/creeks; includes waterfalls
N		Seasonal/intermittent/irregular rivers/streams/creeks
O		Permanent freshwater lakes (over 8 ha); includes large oxbow lakes
P		Seasonal/intermittent freshwater lakes (over 8 ha); includes floodplain lakes
Q		Permanent saline/brackish/alkaline lakes
R		Seasonal/intermittent saline/brackish/alkaline lakes and flats
Sp		Permanent saline/brackish/alkaline marshes/pools
Ss		Seasonal/intermittent saline/brackish/alkaline marshes/pools
Tp		Permanent freshwater marshes/pools; ponds (below 8 ha), marshes, and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season
Ts		Seasonal/intermittent freshwater marshes/pools on inorganic soils; includes sloughs, potholes, seasonally flooded meadows, sedge marshes
U		Non-forested peatlands; includes shrub or open bogs, swamps, fens
Va		Alpine wetlands; includes alpine meadows, temporary waters from snowmelt
Vt	Tundra wetlands; includes tundra pools, temporary waters from snowmelt	
W	Shrub-dominated wetlands; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils	

(continued)

Table 1 (continued)

Wetland category	Code	Wetland type
	Xf	Freshwater, tree-dominated wetlands; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils
	Xp	Forested peatlands; peatswamp forests
	Y	Freshwater springs; oases
	Zg	Geothermal wetlands
	Zk(b)	Karst and other subterranean hydrological systems, inland
Human-made	1	Aquaculture (e.g., fish/shrimp) ponds
	2	Ponds; includes farm ponds, stock ponds, small tanks; (generally below 8 ha)
	3	Irrigated land; includes irrigation channels and rice fields
	4	Seasonally flooded agricultural land (including intensively managed or grazed wet meadow or pasture)
	5	Salt exploitation sites; salt pans, salines, etc.
	6	Water storage areas; reservoirs/barrages/dams/impoundments (generally over 8 ha)
	7	Excavations; gravel/brick/clay pits; borrow pits, mining pools
	8	Wastewater treatment areas; sewage farms, settling ponds, oxidation basins, etc.
	9	Canals and drainage channels, ditches
	Zk(c)	Karst and other subterranean hydrological systems, human-made

^a“floodplain” is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands, and forests. Floodplain wetlands are not listed as a specific wetland type herein

types (such as the various swamps and marshes). Despite the inconsistencies, the typology has served the purpose it was designed for – to provide a simple listing of the wetland types that were considered by the Convention.

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