Supplementary Online Material 1

Harmonized wetland map

This supplementary material presents the harmonized map derived from the reference maps.

The land cover classes include glaciers, open water, Lowland herbaceous floodplain, Highland herbaceous floodplain, shrub floodplain, Forest Floodplain, Mangroves, saline wetlands, and tidal flats (marshes). For glaciers and mangroves, all available mappings indicating their presence are used. Open water is derived from specific reference maps for water surface mapping, ensuring that classes related to floodable areas and water bodies are based on consistent and validated information. Lowland herbaceous floodplains are considered flood-prone herbaceous cover, while Highland herbaceous floodplains are restricted to mountainous areas above 2750 meters, including mosses and lichens. Shrub floodplains and Forest floodplains are refined by cross-referencing definitions from Amazon Wetland LBA and GLAD LULC with water and wetland classes. We also use specific and validated maps for mapping saline wetland classes in the coastal zone. The map classes used in each reference map to compose the harmonized map are detailed in Table S1.

Table S1. Summary of wetland class harmonization: Correspondence between reference maps and final classes.

Mapbiomas

ID input	Original name	Class map name
33	Surface Water	Open water
34	Glaciar	Glacier

Global Surface Water

ID input	Original name	Class map name
3	Permaent water	Open water

GLAD LULC

ID input	Original name	Class map name
100-118	Sparse vegetation	Lowland herbaceous floodplain
128-142	Stable tree cover > 6m	Forest Floodplain
125-127	Stable tree cover < 5m	Shurb Floodplain

ESA

ID input	Original name	Class map name
95	Mangroves	Mangrove
90	Herbaceou wetland	Lowland Herbaceous Floodplain*
90	Herbaceou wetland	Highland Herbaceous Floodplain*

SBTN WRI

ID input	Original name	Class map name
5	Mangroves	Mangrove
10, 11	Short vegetation Wetland short vegetation	Lowland Herbaceous Floodplain*
10, 11	Short vegetation Wetland short vegetation	Highland Herbaceous Floodplain*
8, 9	Wetland Forest Peatland Forest	Forest Floodplain

GLW-FSC-30

ID input	Original name	Class map name
185	Mangroves	Mangrove
187	Tidal Flat	Tidal Flat
186	Salt Marsh	Salt Marsh

Amazon Wetland LBA

ID input	Original name	Class map name

23, 33	Non-flooded bare soil or herbaceous / Aquatic macrophyte (flooded herbaceous) Aquatic macrophyte (flooded herbaceous) / Aquatic macrophyte (flooded herbaceous)	Lowland Herbaceous Floodplain
89, 99	Non-Flooded forest - Flooded forest Flooded forest - Flooded forest	Forest Floodplain
51, 55	Flooded Shurb - Open Water Flooded Shurb - Flooded Shurb	Shurb Floodplain

Global Maps of Tidal Flats

ID input	Original name	Class map name
1	Tidal Flats	Tidal Flat

Global Tidal Marsh Distribuition

ID input	Original name	Class map name
1	Tidal Marsh	Tidal Flat

Global Mangrove Watch

ID input	Original name	Class map name
1	Mangrove	Mangrove

**We applied an elevation threshold of 2,750 meters to differentiate between classes Lowland Hebarceous Floodplain and Highland Herbaceous Floodplain.*

This process created a new wetland basemap with standardized and harmonized classes (Figure S1). Table S2 shows the area covered by each class in the harmonized map.

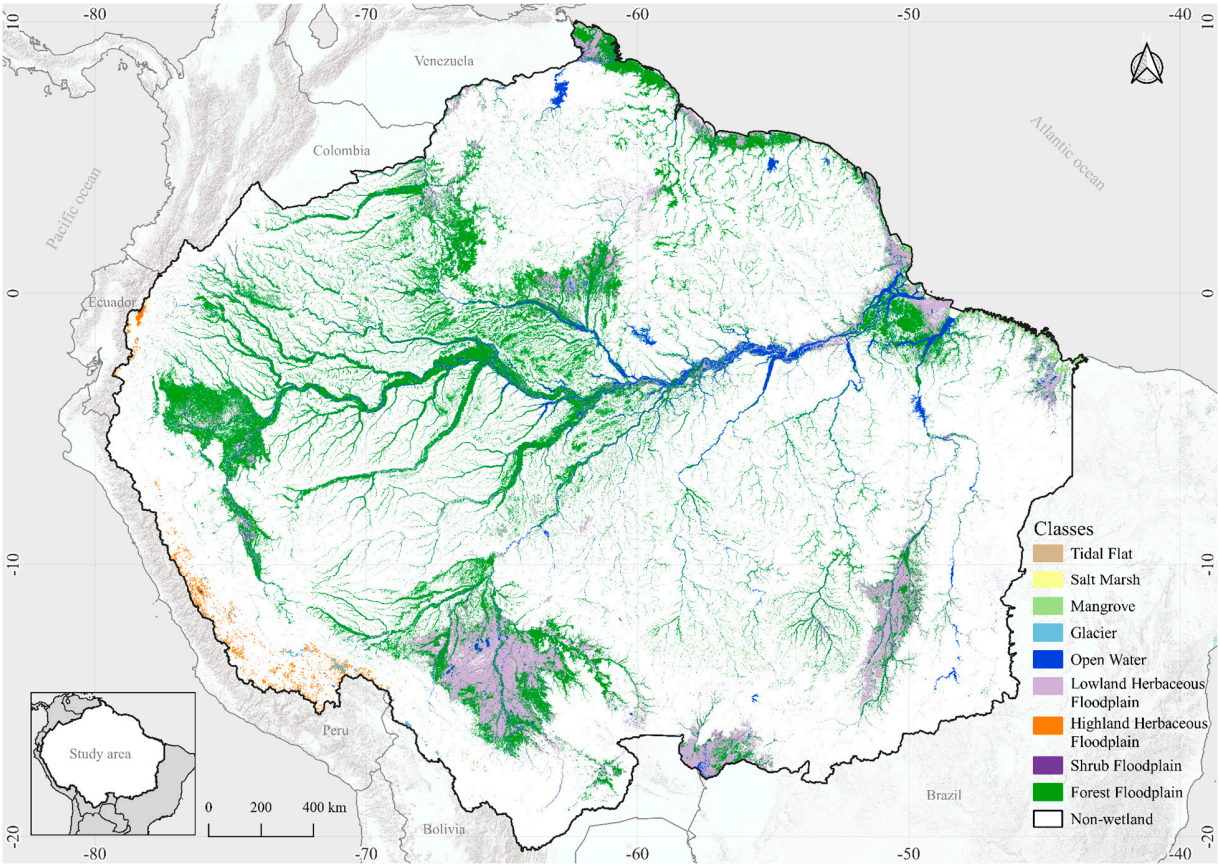


Figure S1. The harmonized map of wetlands obtained with the integration of the available wetland classification dataset (see Table S2 in the manuscript). code.

Table S2. Area of each wetland class in the harmonized wetland map (Figure S1).

Class	Area (Mha)
Forest floodplain	101.9
Lowland herbaceous floodplain	38.1
Open water	15.0
Shrub floodplain	4.5

Mangrove	1.3
Highland herbaceous floodplain	0.3
Glacier	0.1
Tidal flat	0.1
Salt marsh	0.1
Non-Wetland	681.7
Total	843.1