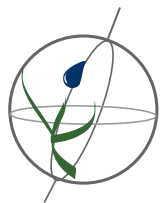


Map Description

Wetlands are an essential part of freshwater systems. Wetlands provide a wide array of goods and services, including flood control, nutrient cycling and retention, carbon storage, water filtering, water storage and aquifer recharge, shoreline protection and erosion control, and a range of food and material products, such as fish, shellfish, timber, and fiber. Wetlands also provide habitat for a large number of species, from waterfowl and fish to invertebrates and plants. Wetlands also have aesthetic and recreational values, although these are harder to quantify. They can include activities, such as bird watching, hiking, fishing, and hunting.

A large part of the world's population lives in or near floodplain and wetland areas, where the soils are rich in nutrients and are therefore very fertile. As a result of their potential as agricultural land (and also because they are feared as places that harbor disease), wetlands have undergone massive conversion around the world. Modifying wetlands has been a major focus of many development and river regulation plans for decades. Wetlands have been either completely converted to other land uses (often by building drainage ditches and filling in swamps) or their functions have been altered gradually by changing hydrologic regimes and introducing agricultural crops and livestock (Revenga et al. 2000). Data on actual numbers of wetlands converted or modified are not available globally. However, Myers (1997) estimated that half of the wetlands of the world were lost in the 20th century.



Watersheds of the World : Global Maps

05. Wetland Area by Basin

This map shows the percentage of the basin area that is covered by wetlands. Eight basins have more than 20 percent of their area covered by wetlands. These basins include, in descending order in terms of percentage wetland area by basin: the Nelson, Mackenzie, and St. Lawrence basins in North America, the Fly and Sepik basins in Papua New Guinea, the Yukon basin in Alaska, the Brahmaputra, and the Mississippi.

Mapping Details

This map indicates the percentage of the basin defined as wetland according to UNEP-WCMC's Biodiversity Map Library. In this dataset wetlands are defined as bogs, marshes, lakes, seasonal, permanent, freshwater, tidal, mangroves, and lagoons. The dataset was compiled using existing maps and expert opinion. Experts delineated wetlands boundaries by generalizing information on inundated areas, rivers, lakes, and topography from the 1:1 million Operational Navigation Charts. UNEP-WCMC's base wetland map provides more detail than other global, coarse resolution data sets that use potential vegetation, soils, and terrain to delineate wetlands. However, because of its scale, it underestimates wetlands extent, particularly seasonal wetlands, flooded forests, and wetlands in valley bottoms, such as dambos ("valley meadowlands" in southern Africa), which are important for agricultural production, food security, and habitat. In North America the area occupied by the Great Lakes, the Great Bear Lake, the Great Slave Lake, and Lake Winnipeg are not included in the calculation of wetland area. For North America wetland polygons were not differentiated by type of wetlands, instead the class field identified the proportion of the polygon--represented by a range--occupied by wetlands. To calculate wetland area, polygons were converted to a 1 square kilometer grid using the minimum of the range. Because this method assumes that wetlands are evenly distributed across each polygon, wetland extent may be overestimated in the North American basins.

Map Projection

Robinson

Sources

Myers, N. 1997. "The Rich Diversity of Biodiversity Issues," pp. 125–138 in Biodiversity II: Understanding and Protecting Our Biological Resources, M. L. Reaka-Kudla, D. E. Wilson, and E. O. Wilson, eds. Washington, DC: Joseph Henry Press.

Revenga, C., S. Murray, J. Abramovitz, and A. Hammond, 1998. Watersheds of the World: Ecological Value and Vulnerability. Washington, DC: World Resources Institute.

UNEP-WCMC (World Conservation Monitoring Centre of the United Nations Environment Programme). 1998. Biodiversity Map Library. Cambridge, U.K.: UNEP-WCMC.