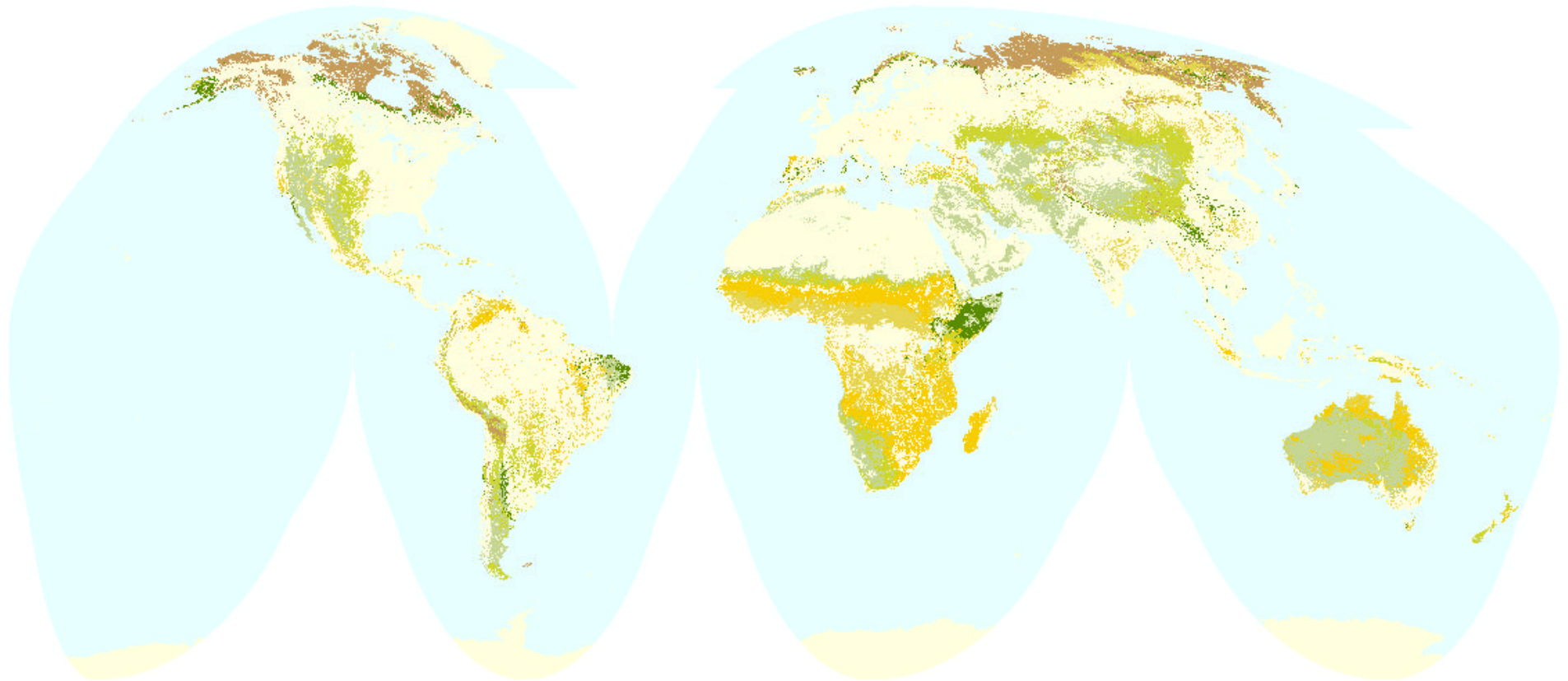


Global Extent of Grassland



Map Projection: Interrupted Goode's Homolosine

Citation: World Resources Institute - PAGE, 2000

Notes:

- Non-woody grasslands
- Open shrublands
- Closed shrublands
- Savannas
- Woody savannas
- Tundra
- Non-grassland area

Map Description:

This map shows the world's grasslands characterized by using the land cover classification scheme of the International Geosphere-Biosphere Programme (IGBP). The map distinguishes six grassland types: non-woody grasslands, open shrublands, closed shrublands, savannas, woody savannas, and tundra.

According to the information presented here, approximately 13.8 percent of the global land area (excluding Greenland and Antarctica) is woody savanna and savanna; 12.7 percent is open and closed shrub; 8.3 percent is non-woody grassland; and 5.7 percent is tundra. Thus, approximately 40.5 percent of terrestrial area is grassland. This estimate of 52.5 million km² for total grassland area falls within the range of previous estimates: 40.5 to 55.5 million km².

Analytical Overview:

The IGBP uses 1-km Advanced Very High Resolution Radiometer (AVHRR) satellite imagery to produce a land cover classification (GLCCD 1998) for grasslands. Map 1 makes two modifications to the global IGBP land cover classification. First, tundra is distinguished from areas classified by the IGBP as shrubland, barren land, and snow or ice using Olson's Global Ecosystem Classification (Olson et al. 1983). Second, urban area was subtracted from grassland area. Urban areas were identified by using the Nighttime Lights of the World database, a 1-km resolution map derived from nighttime imagery provided by the Defense Meteorological Satellite Program, Operational Linescan System of the United States (NOAA-NGDC 1998). This database identifies the locations of stable lights that indicate built-up areas. To calculate the total area of grasslands, the area of these urbanized locations were subtracted from the total area of grassland according to the IGBP dataset. This calculation decreased the total global grassland area by approximately 1 million km².

Source:

1. GLCCD, 1998. Global Land Cover Characteristics Database, Version 1.2.. Loveland, T.R., B.C. Reed, J.F. Brown, D.O. Ohlen, Z. Zhu, L. Yang, and J. Merchant. 1998. "Development of a Global Land Cover Characteristics Database and IGBP DISCover from 1-km AVHRR Data" International Journal of Remote Sensing 21(6-7): 1303-1330. Available On-line at: <http://edcaac.usgs.gov/glcc/glcc.html>. Global Land Cover Characteristics Database, Version 1.2.
2. Olson, J.S. 1994, Global Ecosystem Framework-Definitions. Sioux Falls, SD: USGS EDC. 39.