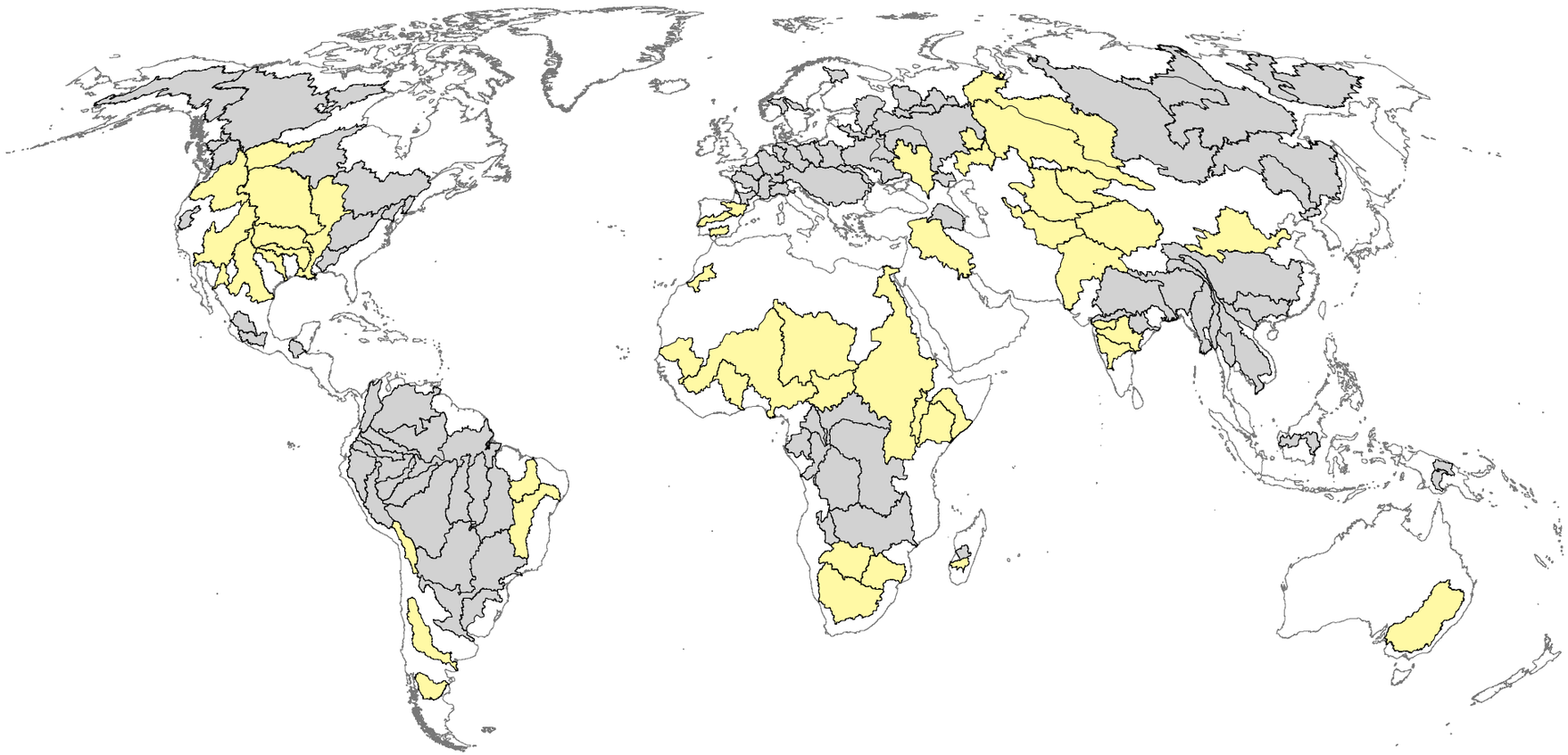
Watersheds of the World - Aridity



Map Projection: Robinson

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

Analytical Overview:

The identification of arid area is based on the World Atlas of Desertification (UNEP, 1992) global aridity zone map, consisting of a 30-minute resolution map that divides the world into six aridity zones. This map is based on an aridity index derived from the ratio of mean annual precipitation to the mean annual potential evapotranspiration. Potential evapotranspiration is the amount of moisture that, if it were available, would be removed by evaporation and transpiration. Potential evapotranspiration can be estimated from temperature and photoperiod (the duration of the daylight period).

Source:

Revenga, C., S. Murray, J. Abramovitz, and A. Hammond, 1998. Watersheds of the World: Ecological Value and Vulnerability. Washington, DC: World Resources Institute, based on data from UNEP. 1997. United Nations Environment Programme. World Atlas of Desertification, 2nd edition. Edited by N. Middleton and D. Thomas. London: UNEP. 182pp.

Description:

This map shows the watersheds where more than 30 percent of the basin area falls within the arid, semiarid, or hyperarid categories under the United Nations Environment Program's World Atlas of Desertification. These areas are based on an aridity index, calculated as a ratio between precipitation and evapotranspiration in the range <0.05 - 0.50. Ratios less than .05 indicate hyperaid zones and ratios of 0.65 or greater indicate humid zones. Over 1 billion people live within arid or partially arid watersheds, especially in North America, Central Asia, and sub-Saharan Africa. In Africa alone, 60 percent of the basins analyzed fell within the arid categories. Watersheds provide many valuable ecosystem services in arid regions such as channeling precipitation run-off into streams, rivers, and lakes and recharging groundwater aquifers, which sometimes provide a source of freshwater for human use.