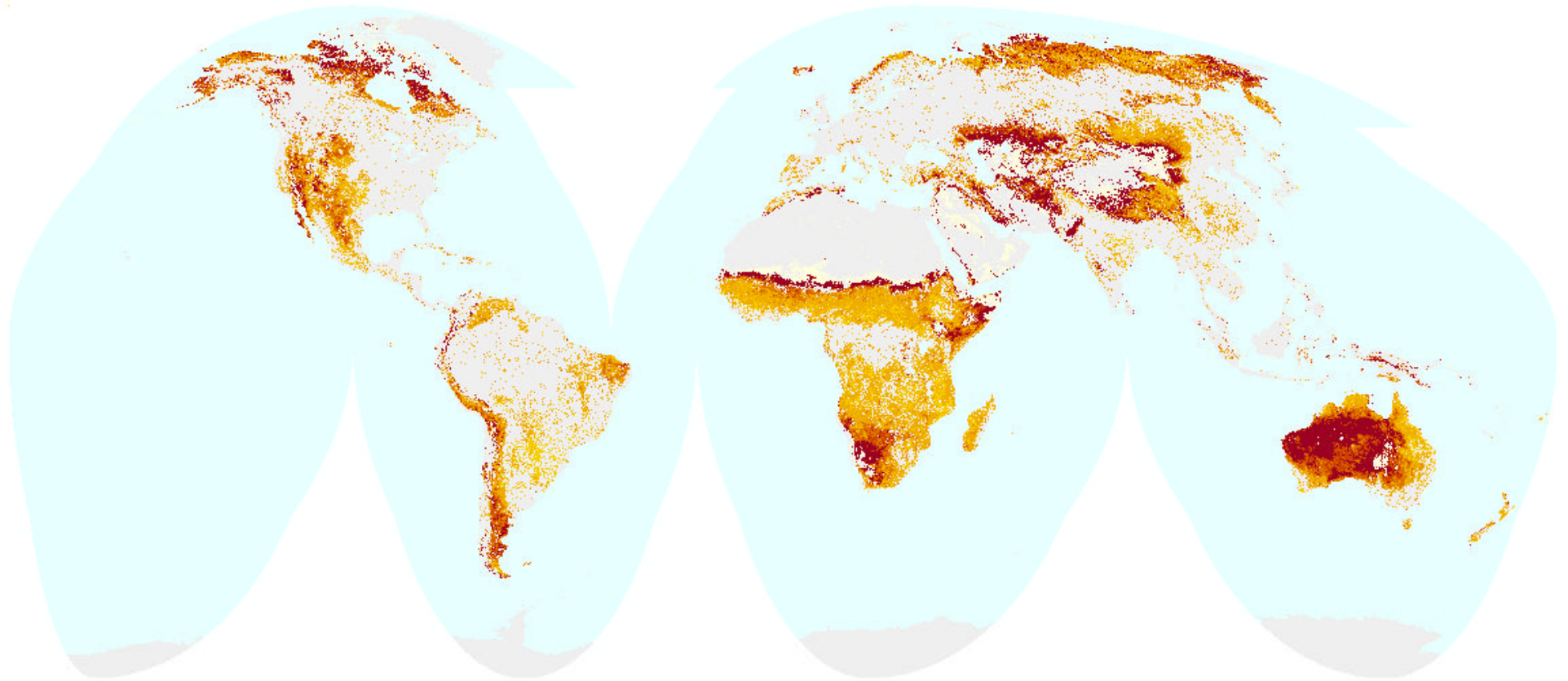


## Global Variation in Net Primary Productivity of Grasslands, 1982-1993

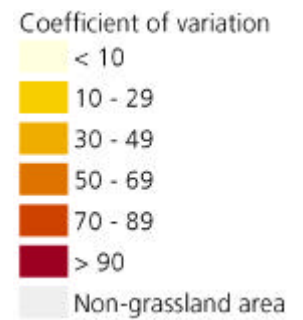


**Map Projection:** Interrupted Goode's Homolosine

**Citation:** World Resources Institute - PAGE, 2000

**Notes:**

These values represent the ratio of the standard deviation of annual net primary productivity to mean NPP values in the period between 1982 and 1993.



**Map Description:**

This map shows interannual variation in Net Primary Productivity (NPP). Generally, the regions of lower NPP have the largest percentage variation in productivity from year to year. This variation may influence human behavior and household decisions about whether to migrate on a seasonal or permanent basis or whether to abandon livestock herding for a more sedentary, agrarian existence.

**Analytical Overview:**

Net Primary Productivity (NPP), and its trend over time, can be used as a measure of grassland condition. Direct observations of NPP are not available globally, but computer models derived from local observations have been developed to represent global NPP (Cramer and Field 1999). One model is the Global Production Efficiency Model (GLO-PEM) developed by the University of Maryland's Geography Department (Prince and Goward 1995; Goetz et al. 1999). The NPP values derived from GLO-PEM are based on "global, repetitive, spatially contiguous, and time-specific observations of the actual vegetation" over an eight-year period (Prince and Goward 1995: 815). Researchers have used eight years of NPP data (1982-1989) from GLO-PEM to analyze interannual variation and to determine the coefficient of variation - or the ratio of the standard deviation of annual totals to the long-term mean.

**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. Goetz, S.J., S.D. Prince, S.N. Goward, M.M. Thawley, and J. Small. 1999. "Satellite remote sensing of primary production: an improved production efficiency modeling approach". Ecological Modeling 122: 239-255.
3. Prince, S.D., and S.N. Goward. 1995. "Global Primary production: a remote sensing approach". Journal of Biogeography 22: 815-835.