Terrestrial Ecoregions of the World: A New Map of Life on Earth


The tapestry of life on Earth is unraveling as humans increasingly dominate and transform natural ecosystems. Scarce resources and dwindling time force conservationists to target their actions to stem the loss of biodiversity—a pragmatic approach, given the highly uneven distribution of species and threats (Soulé and Kohm 1989, Olson and Dinerstein 1998, Mace et al. 2000, Myers et al. 2000). Unfortunately, the ability to focus strategically is hindered by the absence of a global biodiversity map with sufficient biogeographic resolution to accurately reflect the complex distribution of the Earth’s natural communities. Without such a map, many distinctive biotas remain unrecognized. In this article, we address the disparity in resolution between maps currently available for global conservation planning and the reality of the Earth’s intricate patterns of life. We have developed a detailed map of the terrestrial ecoregions of the world that is better suited to identify areas of outstanding biodiversity and representative communities (Noss 1992). We define ecoregions as relatively large units of land containing a distinct assemblage of natural communities and species, with boundaries that approximate the original extent of natural communities prior to major land-use change.

Our ecoregion map offers features that enhance its utility for conservation planning at global and regional scales: comprehensive coverage, a classification framework that builds on existing biogeographic knowledge, and a detailed level of biogeographic resolution. Ecoregions reflect the distributions of a broad range of fauna and flora across the entire planet, from the vast Sahara Desert to the diminutive Clipperton Island (eastern Pacific Ocean). They are classified within a system familiar to all biologists—biogeographic realms and biomes. Ecoregions, representing distinct biotas (Dasmann 1973, 1974, Udvardy 1975), are nested within the biomes and realms and, together, these provide a framework for comparisons among units and the identification of representative habitats and species assemblages.

A new global map of terrestrial ecoregions provides an innovative tool for conserving biodiversity

Although our ecoregions are intended primarily as units for conservation action, they are built on the foundations of classical biogeography and reflect extensive collaboration with over 1000 biogeographers, taxonomists, conservation biologists, and ecologists from around the world. Consequently, ecoregions are likely to reflect the distribution of species and communities more accurately than do units based on global and regional models derived from gross biophysical features, such as rainfall and temperature (Holdridge 1967, Walter and Box 1976, Schulz 1995, Bailey 1998), vegetation structure (UNESCO 1969, deLaubenfels 1975, Schmidthüsen 1976), or...