

BOOK REVIEW

Bailey R.J., ECOSYSTEM GEOGRAPHY (From Ecoregions to Sites). - Springer, Second edition. NY, Dordrecht, Heidelberg, London, 2009, 251 p., 142 illustrations in 154 parts, ISBN 978-0-387-89515-4.

There has been an increasing tendency to map biodiversity over territorial units ecologically significant (ecoregions) in the last thirty years. An ecoregion is "a relatively large unit of land or water containing geographically distinctive compilation of species, natural communities, and environmental conditions". Several standard methods of classifying ecoregions have been developed, with climate, altitude, and predominant vegetation being the distinguishing criteria. The Bailey's classification system consists of a hierarchy of ecosystem units and associated mapping criteria. Established units involve identifying the environmental factors setting the areal distribution of ecosystems and drawing boundaries where they change significantly. The top level of distinction - macroscale units and/or ecoregions - are climatically controlled and delineated as major climate zones. Mesoscale units are dictated by landform and microscale level works with individual sites determined by topographically determined topoclimate and soil moisture regimes. It is a hierarchical system of four levels: domains, divisions, provinces and sections. Domains are the highest geographic levels, e.g., polar domain, dry domain, or humid tropical domain. They are split into smaller divisions by the combined criteria of climate and vegetation and the divisions are split into smaller provinces that are usually defined by their major plant formations (the relationship to European schools of vegetation and/or biogeocoenoses classifications transformed to the conditions of the American continent by V. Krajina who immigrated after WWII to Vancouver is obvious). Provinces are divided into sections, which are defined by geomorphological features, i.e., landforms present.

The first edition of this book published in 1996 described the patterns of ecosystem distribution at multiple scales in terms of mechanisms causing them, and covered connections between these patterns, conservation, and management. It was written at times when few published materials on ecosystem geography were available, and none had systematically elaborated the principles behind the mapping of ecosystems in a form accessible to advanced students and practitioners. This second edition builds up on the previous one, incorporating new information and explaining concepts presented in the first edition more clearly. New sections were added: how ecoregion boundaries were determined, ecoregion redistribution due to climate change, ecosystem processes (such as fire regimes), empirical versus genetic approaches to classification, and human modification to ecosystems, such as through the introduction of invasive species.

Ecoregions are defined by their shared biotic and abiotic characteristics and this way they represent practical units on which it is possible to base nature protection areas and landuse planning. The book has been updated throughout with new text and figures and with new resources reviewed. Further examples from the outside of the North American environment were described, particularly at the meso- and microscale. There is also an added discussion on alternative mapping systems and their relation to the system presented in this book. Ecosystem Geography is generously illustrated with a number of new diagrams, photographs, and tables. The second edition also includes two color maps showing ecoregions of the oceans and continents. It is a recommendable work for students of landscape ecology and conservation planning on a regional scale. The hierarchical nature of presented ecoregion classification allows for conservation management to be planned and implemented at a variety of geographical levels.

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