Ecological Restoration: A Global Challenge


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Ecological Restoration: A Global Challenge is an edited compilation consisting of 13 chapters in two parts and assembled by Francisco Comín. The 23 contributing authors represent a broad and impressive global cross-section of investigators in ecosystem restoration. Part 1: Global Perspectives for Ecological Restoration, includes six chapters that frame the challenges for restoration ecology in the context of global issues. Part 2: Toward the Practice of Ecological Restoration on a Global Scale, includes seven chapters that illustrate specific challenges and strategies for ecological restoration.

The field of restoration ecology has been mired in definitional and operational debate for over 30 years, hindering the development of this critical science and practice. Comín has crafted a book that revitalizes the vision for ecological restoration (Chapter 1). The authors each provide their perspective and vision for how the discipline has and should be applied to address Earth’s most pressing ecological concerns. Discussions of the role of forest restoration in support of carbon credits (Dario Papale and Riccardo Valentine in Chapter 2 and Johannes Ebeling, MalikaVirah-Sawmy, and Pedro Costa in Chapter 3) highlight the need for a more defined protocol for forest restoration in humid climates (addressed in Chapter 7). Robert Costanza describes how ecosystem services valuation could motivate ecological restoration (Chapter 4). Costanza’s framing of future scenarios as “business as usual” versus “restored Earth” is useful in linking the science of restoration ecology with the philosophy of sustainable design.

Throughout the book, authors attempt to link ecological restoration to cultural values and sustainability. Eric Higgs in Chapter 4 calls this linked approach “focal restoration.” Although I do not think the terminology will catch on, the concept is certainly powerful. Rebecca Vidra and Theodore Sheer explore ethical dimensions more deeply in Chapter 6. They suggest that the challenges of ethics in ecological restoration are driven by two factors: restoration is a human endeavor, and it involves moving science to practice. These factors, the authors contend, demand development of a civic engagement process that incorporates local cultural values, priorities, and understanding of ecosystems and communities.

Operationalizing ecological restoration principles is the difficult part. David Lamb (Chapter 6) describes the difficulty of forest restoration in the tropics in clear terms—the motives are generally not restoration but rather profitability. The lack of an integrated process for restoring forests for both agroforestry–timber and ecosystem services results in haphazard and disconnected restoration projects. Lamb offers an approach that attempts to resolve this dilemma through social and cultural strategy development and implementation.

One of the most important contributions of this book is the vision for a global scope of ecological restoration developed in Part 2. Bojie Fu and colleagues describe the highly complex political and cultural challenges for ecological restoration of degraded lands in China (Chapter 8). They recommend a monitoring and assessment strategy for the country to focus research and application of restoration resources. Bill Mitch summarizes experiences from Delaware Bay, the Florida Everglades, Mississippi River Delta, and Mesopotamian marshlands to illustrate basic principles in wetland restoration strategies (Chapter 9). Comín and colleagues similarly review coastal zone ecosystem restoration by ecosystem type (Chapter 10). The fastest growing ecosystems on the planet, urban ecosystems, represent the most robust