Biodiversity and Native America. Paul E. Minnis and Wayne J. Elisens (eds.). University of Oklahoma Press, Norman. 2000. Pp. 310. $34.95 (cloth) ISBN 0-8061-3232-9, $14.95 (paper) ISBN 0-8061-3345-7.

With contributions from a wide range of respected scholars, *Biodiversity and Native America* is an important contribution to the ethnobotanical literature of North America. Yet this volume is more than a collection of studies about the relationship between Native North Americans and biodiversity; the strong theoretical orientation greatly advances the conceptualization of human-environmental interactions globally. In the introduction to the volume, the editors assert, "Native peoples have been neither passive consumers of nature's economy nor primitive rapists of pristine environments" (p.3), thereby challenging the validity of the 'noble savage' versus '*Homo devastandus*' dichotomy. Instead, the editors suggest that aboriginal peoples have actively shaped North American landscapes and patterns of biodiversity for millennia, and have accumulated important ecological knowledge in the process. These two themes—active indigenous management of the environment and the utilitarian value of Native American knowledge—are explored throughout the book. In doing so, the contributors challenge common biases that have left ethnobiological investigations of indigenous North American peoples under-researched in comparison to the growing body of literature on tropical regions.

The editors rightfully address the irony that although concern for biodiversity is strong in developed countries, temperate regions are often considered less relevant because they are presumed less diverse biologically and occupied by more acculturated indigenous peoples. Collectively, the authors show just how wrong these perceptions are. Minnis and Elisens convincingly establish the importance of ethnobiological research in indigenous North America, given the unique cultural and biological diversity of the region, the significant economic and political resources available for environmental research, and the fact that, despite historical disruptions, ethnobiologically rich cultural traditions still persist.

The editors argue that recognition of indigenous environmental experiences serve multiple purposes, and these purposes fall into two broad categories. First, indigenous environmental experience allows a better understanding of ecosystem dynamics and environmental history, which can help establish ecological "baselines" and lead to better biodiversity restoration, management, and conservation programs. Second, the text recognizes the essential value of Native American medicines, crop diversity, and past and present farming strategies, which may benefit contemporary indigenous peoples and the broader population. The editors define the concept of biodiversity broadly to include the cultural context of human ecology among Native Americans. Native America is defined as encompassing contemporary Mexico, the United States of America, and Canada.

The text's first section, "Issues and Overviews," explores interactions between Native Americans and knowledge. Helping clarify the debate over whether indigenous management practices positively impacted biodiversity, Gary Nabhan proposes longitudinal studies based on careful analysis of case studies within a par-

ticular biome—the Sonoran Desert region. Nabhan provides a much-needed critique of how narrow definitions of "species richness" and "language richness" overlook important species interactions of which Native Americans are a part. He likewise criticizes "salvage" approaches to ethnobiology and purely descriptive surveys that provide little information about indigenous perceptions and management of the natural world. In order to overcome these methodological and philosophical shortcomings, Nabhan proposes a focus on indigenous ecological knowledge of plant-animal interactions, the component of biodiversity most likely to be lost. In "Relationships between Mexican Ethnobotanical Diversity and Indigenous Peoples," Robert Bye and Edelmira Linares' overview includes a helpful discussion of the evolutionary, morphophysiological, and ecological impacts of different management intensities. The authors also discuss how the commonly assumed correlation between biological and cultural diversity is inexact and may undervalue entire cultural and ecological regions of importance. Walter Lewis' "Ethnopharmacology and the Search for New Therapeutics" focuses on the drug discovery process in North America and develops a model procedure for the development of future pharmaceuticals based on experiences in Peru. He suggests that bioprospectors should target plants utilized by early settlers and indigenous peoples, highlighting the difficulty of defining and compensating collaborators due to the shared nature of ethnobiological knowledge.

The second section, "Ethnographic Case Studies," presents overviews of indigenous knowledge, management practices, and belief systems in the Great Basin, British Columbia, and Chihuahua, Mexico. Catherine Fowler's chapter explores the dual meaning of utilitarian and spiritual value of plants among the former broad-spectrum hunters and gatherers of the Great Basin. Fowler documents how the Basin's Timbisha Shoshone have "domesticated" their environments in ways that fit their standards of a managed landscape, leaving open for debate whether such changes are ultimately positive or negative. In an exceptionally well-organized and well-written chapter, Sandra Peacock and Nancy Turner discuss how the foraging populations of British Columbia actively managed their environment to increase the local abundance of plants, and argue that the cessation of such management practices has actually led to the deterioration of certain habitats and resources. Enrique Salmón's "Iwígara, A Rarámuri Cognitive Model of Biodiversity and Its Effects on Landscape Management," rounds out this section by discussing how land management practices are often embedded in cultural values and belief systems.

In the final section of the book, "Prehistory and Biodiversity," Ford, Fritz, and Hammett demonstrate how knowledge of environmental interactions and impacts can be extended into the past, with important implications for understanding environmental history and contemporary ecosystem patterns. Richard Ford, in his chapter, "Human Disturbance and Biodiversity: A Case Study from Northern New Mexico," introduces the working concept of "prehistorical cultural topography," or the cultural transformation of place due to intentional interaction with the natural world. Ford argues that prehistoric landscape alterations, such as water control devices, create new habitats, which can have both short term and long term impacts on the distribution of plants and animals. In her chapter, "Levels of Biodiversity in Eastern North America," Gayle Fritz discusses the need to

ground information in historical and geographical contexts rather than making sweeping generalizations about all indigenous peoples. She accomplishes this through a well-documented discussion of the environmental impacts of the mixed foraging and farming systems prevalent among eastern indigenous peoples. Her chapter recognizes Eastern North America as an important independent center of plant domestication, and discusses the historical effects of diversified foraging and farming strategies on species diversity, community level diversity, and ecosystem diversity. However, Fritz cautions against the current reactionary trend to overestimate the impact of Native Americans, and warns that such arguments may be appropriated by profit-oriented industries to justify currently destructive practices. Julia Hammett's final chapter utilizes ethnohistorical evidence to describe the initiation and maintenance of a shifting mosaic of environmental "patches" in the Southeast prior to European contact. By providing a valuable assessment of how to use documentary records as data sources, Hammett broadens the scope of methodological possibilities for exploring historical human-environmental interactions.

Collectively, the contributors to this volume provide an insightful and well balanced understanding of the relationship between biodiversity and Native Americans, past and present, as well as a much needed commentary about the utility of this knowledge. Although the theme of indigenous empowerment, intellectual property rights, and involvement in management projects could have been developed further, this book clearly demonstrates that issues of native biodiversity have more than mere academic relevance. As a result, this book is useful for students, scholars, and environmental managers of North American biodiversity, as well as persons interested in human-environmental relations throughout the world.

Meredith Dudley
Tulane University
New Orleans, Louisiana

Participatory Approaches to the Conservation and Use of Plant Genetic Resources. Esbern Friis-Hansen and Bhuwon Sthapit (eds.). International Plant Genetic Resources Institute Publications, Rome. 2000. Pp. 214. $32.00 (paper). ISBN 92-9043-444-9.

Several sections of the Convention on Biological Diversity (hereafter, the Convention) highlight the relationship between indigenous and peasant peoples and the sustainable use of our world's biodiversity. Signatory countries to the Convention have agreed to recognize this relationship and respect the ecologically sound traditional knowledge that indigenous and peasant communities employ in managing their resources. The Convention signatories also have agreed to involve and equitably share benefits with these local communities in development interventions undertaken by their governments and their partners. One of the international organizations that appears to have taken these sensible and ethical prescriptions to heart is the International Plant Genetics Resources Institute