

and degradation to undo the damage of previous human misuse. This is also a technological narrative in that scientific management is used to restore the land to (or preserve it in) a more natural form, which can once again become useful as a renewable resource (the ghost of Gifford Pinchot as the US Forest Service) or as a wilderness (the ghost of John Muir as the Sierra Club). Yet even the concept of an “untouched” wilderness can be yet another way to deny Native American ties to the land (299) and to assert that human beings control the state and future of the natural world, just for a different kind of use than before. Envisioning people as outside the environment and manipulating it is common fundamental proposition in the ideologies of second creation, resource recovery, and wilderness, and Nye argues that all three facilitate thinking of “unprotected” land as a blank space ripe for human consumption. This provocative ending is a fitting close to a book that may inspire readers to reevaluate much of what they take for granted about American history.

***Ancient Maya Life in the Far West Bajo: Social and Environmental Change in the Wetlands of Belize.* By Julie K. Kunen. Anthropological Papers of the University of Arizona, no. 69. Tucson: The University of Arizona Press (2004), x, 174 pp.**

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Traditional archaeological studies of ancient Maya settlement patterns have historically incorporated questions regarding agricultural intensification and population density. For the first half of the 20th century, it was long assumed that the ancient Maya tilled the soil by the same slash-and-burn technique that is practiced today. At the height of Maya civilization (A.D. 550-800), however, population rose dramatically in the lowland tropical forests such that swidden agriculture, which requires extensive fallow field periods, could not have sustained such dense populations on the landscape. In recent years, scholars have dismissed these simplistic ethnographic analogies in favor of more rigorous field methods and advanced theoretical frameworks that examine how the ancient Maya supported a diverse society comprised of royalty, elite craftsmen, and commoners living together in an ecologically variable landscape. Kunen’s dissertation research, recently published in the Anthropological Papers of the University of Arizona as *Ancient Maya Life in the Far West Bajo*, contributes directly to this research agenda by examining wetland bajo farming communities who once thrived in the rural hinterlands of northwestern Belize. Not only does Kunen’s work show how these Maya farmers successfully adapted to a fluctuating environment, but she also forges new ground on the discourse of ancient Maya agriculture by offering insightful interpretations as to how these bajo farming communities integrated with larger political and economic systems of the La Milpa settlement in northwestern Belize.

Current interpretations of prehispanic Maya agricultural systems emphasize the geographic variability of land resources and the variety of adaptive farming strategies employed by Maya farmers. This model has been termed the “managed mosaic” approach to prehispanic Maya land use (Fedick 1996), but is based on concepts that have long been recognized and accepted by researchers studying Maya subsistence (Culbert, et al. 1978, Flannery and Coe 1968, Netting 1977, Turner 1978a, 1978b). This approach maintains that ancient Maya farmers took advantage of local-scale biological and environmental diversity by scattering their agricultural fields across these different landscape elements. Far from the classic view of the lowlands as a uniform and agriculturally limited landscape, the “managed mosaic” model depicts the Maya lowlands as a montage of landscapes that were perceived and managed in various ways across the region and through time, often in response to political and economic pressures. Kunen’s research uses this cross-sectional approach to examine the ecological and cultural variability of various microenvironmental zones surrounding the bajo settlements near La Milpa. Through transect and block surveys she describes topographic changes in modern bajo vegetation types and identifies several agricultural use zones of the prehistoric past. Additional fieldwork consists of mapping and recording nearly 700 agricultural features including terraces, berms and rock piles as well as

numerous residences in order to examine the spatial relationships between prehistoric settlements and agriculturally-exploited landscapes. Archaeological excavation of a sample of these features provides more detailed understanding of the cultural context in which they occurred.

A primary goal of Kunen's research is to better understand the social and economic organization of these peripheral bajo farming communities in relation to and juxtaposition with elite authority figures centered some 5km away in La Milpa center. Chapter 2 is devoted to situating Kunen's study area of the Far West Bajo in the context of previous research conducted at La Milpa and in relation to the settlement history of northwestern Belize more broadly. Prior to Kunen's exploration of the Far West Bajo sustaining area, research at neighboring La Milpa identified a cosmological settlement pattern with extensive monumental architecture, four plazas and multiple thrones in the site core. Surrounding this ceremonial center was a dense residential settlement with four minor temple groups located on hilltops oriented to the cardinal directions (Tourtellot, et al. 2003). Additional collaborative research efforts investigated ancient water and land management practices in this region of northwestern Belize and identified a number of check dams and cross-channel terraces near some of the major drainage canals emptying into the Far West Bajo (Dunning, et al. 2003). Kunen's research explored one of these major drainages called the Far West Bajo, which was an important stream channel draining La Milpa center and therefore in a prime location to play an important role in agricultural production for the entire polity.

In response to research efforts aimed at studying the long-term and reflexive human-environment interactions of the ancient Maya, scholars have begun examining the ecological ramifications of such intensive land-use of tropical environments over the past several thousand years (Gómez-Pompa, et al. 2003). Research results presented in *Ancient Maya Life in the Far West Bajo* reconstruct paleoenvironmental findings (Chapter 3), as well as document agricultural feature excavations (Chapter 4) and summarize the spatial organization of the Far West Bajo settlement (Chapter 5). The combination of these multiple lines of evidence supports Kunen's assertion that bajo farmers adapted and responded to anthropogenically-induced environmental changes by altering their land management practices over time. However, the crux of Kunen's argument for the cause of environmental change in the Far West Bajo rests upon the unproven hypothesis that early settlers left hillslopes denuded of trees and vulnerable to erosion from slash-and-burn agricultural practices. Reliance upon the swidden hypothesis as a sustainable means of production has been rejected for the prehispanic Maya since the late 1970s (see Netting 1977, Turner 1978b) and contradicts current theories of Maya land use (Fedick 1996), so dependence on such an argument is circumspect. Kunen goes on to argue that agricultural resource specialists adapted to this dwindling landscape by implementing new resource conservation strategies and land management techniques in the form of terraces and berms as identified through archaeological survey and excavation. These agricultural features are extremely difficult to date absolutely, so determining their exact period of use is often relegated to associated ceramic chronologies. Although paleoecological investigations of soils, geomorphology, hydrological conditions, and pollen analysis are geographically limited (the total study area was less than 1km<sup>2</sup>), localized results suggest that the once perennial wetland bajo was transformed into a drier seasonal swamp with scrub forest vegetation. However, the precise cause and timing of this environmental change is still unclear and arguably deserves additional consideration.

Despite the heterogeneous landscape and variable water resources of the Maya lowlands, the prehispanic Maya went to great and numerous lengths to maintain their subsistence base. The variety of cultivation techniques employed in the Maya lowlands suggests that extensive ecological knowledge of local landscapes was necessary to produce sustainable yields each season. Production of agricultural crops such as maize—through its various stages of field preparation, planting, maintenance and irrigation, harvesting, and food-processing—is a complex and variable process that cannot be correlated with simple, hierarchical models emphasizing centralized control (e.g., Chase and Chase 1998). Contrarily, some archaeologists view the irregular and discontinuous pattern of agricultural features as smallholder populations responding to localized production needs (e.g., Fedick 1994, Netting 1993). Kunen argues that the spatial patterning of the residential and agricultural features of the Far West Bajo stands in marked contrast to both of these patterns (55). In recognition of the complexity of ancient Maya social and economic systems, as they relate directly to subsistence strategies and resource use, Kunen demands a more fluid and dynamic conceptual framework in which to situate the interdependent linkages directing the organizational parameters of society. Couched in the language of heterarchy, she outlines a model for community organization based upon the garden-infield-

outfield framework (Netting 1977) that stratifies the landscape into house lot, agricultural, and extraction zones (Chapter 6). The spatial arrangement of these zones does not support the interpretation that intensive agriculture was centrally planned and implemented, nor do they seem to represent localized, small-scale levels of production. Instead, Kunen suggests that this tripartite zonation represents an adaptive response to anthropogenic environmental change whereby economic specialization was “tuned to the distribution of resources and not to major centers” (105). This interpretation emphasizes a reflexive relationship between humans and the environment that simultaneously downplays the significance of elite meddling in the organization of production while emphasizing the actions of ancient peasant farmers who for so long has been ignored in Maya archaeology. Not only does Kunen’s research contribute to our growing understanding of ancient Maya land practices, but she provides a means for conceptualizing the complex social interactions of early Maya people.

In general Kunen offers an insightful, thorough, and multilayered analysis of prehispanic Maya agricultural practices in a wetland environment. Conducting fieldwork in such a bajo landscape is no small or easy task as hinted at in some of her anecdotal stories, yet Kunen seems to have collected the type and quality of data necessary to credibly examine environmental and cultural change from a perspective of historical ecology. More complete survey coverage of the prehistoric landscape might have provided a more regional understanding of environmental change, but it was obvious Kunen’s concern was directed towards changes in local conditions. In a sophisticated handling of social theory and scientific methodologies, Kunen convincingly tells the story of ancient life in the Far West Bajo as it may have been centuries ago.

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***Children and Nature: Psychological, Sociocultural and Evolutionary Investigations.* Edited by Peter H. Kahn, Jr. and Stephen R. Kellert. xix + 348 pp. Cambridge, Massachusetts: The MIT Press. 2002. Includes name and subject indexes.**

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Though the backgrounds of the contributors to this edited volume are diverse, all of the authors strive to support one thesis – that there is value in children being allowed to play in the dirt. The authors defend this thesis with approaches ranging from the poetic-magical, drawing on the importance of the magic and the mythic in developing memories of nature that endure into adulthood (Chawla, Ch.8) to the rigorously scientific, looking at children’s contact with nature through direct, indirect, vicarious and symbolic means and inferring how this impacts children’s emotional, intellectual and values-related development (Kellert, Ch. 5). Most authors in this collection, however, seek a balance between qualitative and quantitative data in their explorations of children’s ecological experiences. Regardless of the field of the authors’ expertise, research on the topic of children’s interaction with nature seems somewhat limited. This volume attempts to collect what is known, and bring together a diverse group of thinkers to put together the pieces already available in the literature to support their inferences about the value of children developing a relationship with the natural world. A few of the authors do conduct research on the direct effects of interaction between children and the natural world, but these studies are more limited in scope and often focus upon the therapeutic functions of such interactions (Katcher, Ch. 7) or children’s experience of the natural world in a more constrained setting such as a zoo (Myers, Jr. and Saunders, Ch. 6).

The first two chapters of the volume have a particularly strong evolutionary component, as Verbeek and de Waal (Ch. 1) first examine the primate relationship with nature, introducing the key term biophilia, “an innate tendency to affiliate with natural things” (p. 1). Their contribution is followed up Heerwager and Orians (Ch. 2), who explore how children’s experience of the natural world could have shaped their survival in the past.

Several of the authors display a strong cognitive orientation, exploring the cognitive foundations of biological understanding (Coley, Solomon & Shafto, Ch. 3) and subsequently, the way interaction with the environment builds a structural framework of concepts and values in children (Kahn, Jr. Ch. 4). This last chapter may be of particular interest to anthropologists as it compares children’s construction of concepts and values through environmental interaction across cultures. Also of anthropological interest may be Katcher’s contribution (Ch. 7), as he draws on Victor Turner’s ideas of liminality and *communitas* to explain why children in residential treatment facilities for behavior problems behave differently in the presence of animals.

Two essays specifically address the adolescent and nature, with the first (Kaplan & Kaplan, Ch.9) exploring the thesis that adolescents may take a “time-out” from appreciating and enjoying nature. They ultimately support this thesis, citing adolescents’ penchant for social activity over solitary reflection, an activity more often associated with natural spaces. Thomashow (Ch. 10) supports the opposite contention, however, showing that adolescents do remain engaged with nature, particularly if their educational setting makes a hands-on project related to nature part of the curriculum.