FIRE, NATIVE PEOPLES, *and* THE NATURAL LANDSCAPE

Edited by

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Preface

For nearly two centuries, the creation myth for the United States envisioned an initial condition of wild nature, of wilderness. Although challenged by some, this view until recently remained the dominant view, uncritically and naively accepted by layperson and scholar alike. Over the last two decades, however, a contrary vision has emerged. Driven by heightened appreciation for the activities of Native Americans as landscape modifiers, the conventional wisdom now sees the country's roots not in a state of nature, not a "pristine landscape," but in a human-modified world, a "humanized landscape." As a reaction against the hyperbole of the older view, the modern perspective has merit, but the spokespersons for a human-altered continent in pre-European North America may carry their critique to excess: the older monolithic "myth of the pristine landscape" has been replaced by a new and equally monolithic "myth of the humanized landscape."

This book attempts to demythologize the newer paradigm by assessing the role of Native Americans as modifiers of the landscapes in a major portion of the North American continent—the western states—in hopes of establishing a middle ground between the polar positions represented by categorical beliefs in either "pristine" or "humanized" landscapes. Several factors prompt a focus on the American West for this assessment: (1) fires—always potentially linked to humans—were, and remain today, widespread in western ecosystems; (2) the likelihood of finding evidence for a state of nature is greater in the West (to assess the eastern states and conclude that the region, or at least large parts of it, were modified by Native Americans [a likely conclusion] would not move the dialogue toward a middle ground); (3) the presence of wild vegetation over large

areas of the West makes the assessment more immediately relevant to the present-day landscape; and (4) the importance of "wilderness" protection in the West enhances the potential for policy contributions. Moreover, the western states provide an arena wherein certain assumptions about Native American activity serve to simplify the issue: formal agriculture was restricted to the extreme Southwest; population sizes were small, except in lowland California and in the agricultural Southwest; and construction of landforms such as mounds—so conspicuous in parts of the Midwest—seems less common in the West. The preeminent human impact—one that was *potentially* important in almost any part of the West and that could have altered the environment at the broad, landscape scale—is that of burning, of fires set by Native Americans. It is this impact in the American West that is the focus of this volume.

Most specifically, then, this book asks the question: "For the American West, were the fire regimes existent at the time of European contact basically the product of natural factors—conditions of vegetation, attributes of climatic episode, characteristics of short-term weather—or did ignitions by Native Americans fundamentally change those regimes and thus the vegetations associated with them?" The book addresses this question for major subregions of the West, each evaluated by a different author: the Rocky Mountains, the forests of the Southwest, the southern deserts, the northern deserts, the Sierra Nevada, the California chaparral, and the forests of the Cascades and Pacific Northwest. By focusing on one particular human impact, these regional evaluations will help move to a more centrist position the dialogue over the "naturalness" of the pre-European continent.

An introductory essay precedes the regional chapters, which make up the heart of the book. This essay presents the ideals of the pristine versus humanized landscapes, justifies the focus on the American West, assesses broadly the types of impacts by native peoples in the pre-European West, establishes the centrality of fires as the most likely Indian impact on the landscape, and poses the question (whether or not the pre-European fire regime was "natural") subsequently addressed by each author.

In the regional chapters that follow the introductory essay, the authors attempt to answer the central question in the context of particular parts of the West. The ability to provide such answers varies by region and by the type of ecosystem within a region, and ambiguities involving data and meanings of data render definitive conclusions uneven. The authors have been encouraged to make their assessments as completely and honestly as possible, taking their respective arguments in whatever direction their data and judgments lead.

After the regional treatments, the book concludes with a summariz-

ing statement that compares results from the various chapters and highlights patterns both common to the West as a whole and distinctive to various parts of the western states. This summary relates the research findings to questions of policy involving the management of natural areas (particularly on federal lands) and to questions of the "naturalness" of the pre-European western landscape.

The most general goal of this book is to change the character of the debate over whether North America at the time of European contact was pristine or humanized. I yearn for the emergence of a middle ground that recognizes the validity of both possibilities, of a landscape vision that allows a state of nature as plausibly as a cultural artifact. Whether or not we end up with such a rapprochement, of course, depends on what the various authors conclude. It is their judgment and their wisdom that guide the final words.

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CHAPTER 1

THE PRE-EUROPEAN LANDSCAPE OF THE UNITED STATES: PRISTINE OR HUMANIZED?

Thomas R. Vale

All peoples embrace creation myths—stories that tell whence they came. Commonly considered unique to premodern societies, such narratives of origins are also told in contemporary nations. More specifically, the United States—for most of its existence—has envisioned its beginnings as wilderness, a state of nature, a natural landscape. American society expanded across the continent, extending its frontiers through a wild and primeval environment. Over the last couple of decades, however, a contrary creation myth has emerged, rising like a crescendo until it has become conventional wisdom: the nation's roots extend back not into wilderness but into a landscape inhabited by the First Americans, a place both psychologically a home and hearth, and physically an artifact of human activities. According to the extreme version of this vision, the pre-European North American landscape—from the Atlantic to the Pacific, from the Gulf of Mexico to the Arctic Ocean—unfolded as sprawling villages and fields of corn, terraced agricultural plots and diverted streams, meticulously tended trees and clear-cut forests, over-hunted elk and burned-over woodlands. The pristine landscape of an old creation myth has been replaced by the humanized landscape of a newer national narrative.

But the conflicting stories remain a source of contention. The debate

over the character of pre-Columbian America typically focuses on the polar assertions that the continent was either a "natural landscape" or a "human-modified landscape." The strongest characterizations of the former, a pristine America, come from romantics of an earlier day or from popular writers of contemporary times: "All the Western mountains are still rich in wildness" (Muir 1901:2); "Until 1881 the valley of the Little Missouri . . . was absolutely unchanged in any respect from its original condition of primeval wildness" (Roosevelt 1897, quoted in Callicott and Nelson 1998:74); "The parks . . . are . . . America primeval, preserved miraculously" (Anonymous 1991:11); the Americas were "ancient, primeval, undisturbed wilderness" (Bakeless 1961:201).

By contrast, the champions of an omnipresent humanized landscape include both scholars and popular writers: "The Indian impact was neither benign nor localized and ephemeral. . . . What they did was to change their landscape nearly everywhere" (Denevan 1992:370); "the forest primeval had already been widely cleared, converted, and otherwise managed" (Pyne 1982:83); "the Indians . . . created that 'wilderness' we call the Great Plains" (Pollan 1991:221); "most of this continent was owned, used, and modified by native peoples" (Kay 1994:381); "human influence is woven through even what to our eyes are the most pristine landscapes" (Budiansky 1995:5); "the land that the early settlers found in the West . . . was not made that way by God alone but partly by man" (Chase 1987:97); "Wilderness is certainly the wrong word for what early America was. . . . it was a managed landscape" (Flores 1997:6); "In the Western hemisphere, pre-Columbian people changed the landscape nearly everywhere from the Arctic to Patagonia" (Stevens 1993). In spite of the logic of an intermediate position—some areas were humanized, some were not (Vale 1998, 2000)—the rhetoric often reverts to the polar positions.

Explaining the Extremes

Several considerations explain and help mediate the stances at the extremes. These factors, characterized as ambiguities, can be portrayed along gradients that separate the polar opposites.

Intensity Ambiguity

The meanings of key concepts defy clarity: what do the words "humanized" and "pristine" actually mean? Given a series of landscapes that vary continuously between unambiguously "humanized" and unarguably "pristine," such intermediate landscapes might be classified as belonging to one polar condition or the other (the human tendency to classify phenomena into dichotomies encourages such polarization of intermediate

conditions), depending upon the criteria of "modification" and "naturalness" employed. An example of five landscapes from the Yosemite region of California illustrates the point (Figure 1.1). A Miwok village site in upper Yosemite Valley—dwellings walled with tree bark, acorns stored in elevated granaries, nearby stands of hazelnut (*Corylus cornuta*) pruned, bracken (*Pteridium*) on a river terrace dug for roots, broadea (*Brodiaea*) bulbs harvested, killed mule deer (*Odocoileus hemionus*) hanging for butchering, campfires burning collected dead tree limbs—presents a humanized landscape. But nonhuman processes play a role as well: the regional and local climate; the nearby Merced River's hydrology; the granitic bedrock; the landforms of glacier, river, and slope erosion; the soil development beneath the trees; and even the presence of those biological species whose abundance may be influenced by Miwok activities. Away from the village, at the lower end of the valley, a green meadow—perhaps maintained by Indian burning—feels the footsteps of

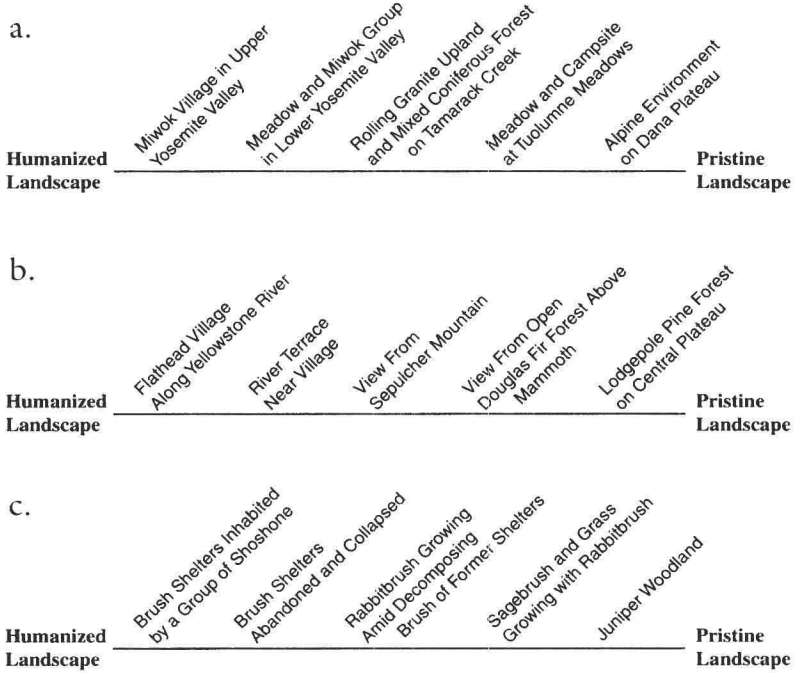

Figure 1.1. Three gradients along which landscapes may vary from unambiguously humanized to unarguably pristine. a. Intensity scale: Intensity of landscape modification by humans and their activities, as exemplified by examples from the Yosemite region of California. b. Spatial scale: Degree to which a local humanizing effect extends spatially, as illustrated by examples from the Yellowstone region of Montana and Wyoming. c. Temporal scale: Degree to which a one-time human influence continues to be perceived in the landscape, as represented by a settlement in eastern Nevada.

a group of Miwok gatherers who search for raspberries (*Rubus*) in thickets along the forest edge. High above the valley floor, on an expanse of rolling granite that falls away into Tamarack Creek, a cluster of smooth and rounded bedrock holes indicates that the Miwok grind acorns here, although no person is visible at the moment. Surrounding the granite surface, the mixed-conifer forest may or may not be influenced by Indian burning (lightning fires are common here). Up in the high country, in Tuolumne Meadows, a group of Miwok walk beside the river as they travel from the eastern side of the Sierra Nevada back toward Yosemite Valley, but their activities may involve only an overnight campsite (perhaps not unlike that of a modern backpacker), charcoal from a nighttime warming fire amid gathered rocks, or debris made up of obsidian or pine nuts (*Pinus monophylla*) left scattered about. On Dana Plateau, well above tree line and empty of people, nothing would suggest a humanized landscape—the sky, the rock, the canyon, the trickle of water from receding snow banks, the alpine plants hugging cobbles and soil, the occasional summering deer alert for mountain lion (*Felis concolor*)—all create a scene completely the product of natural processes. Taken together, then, these landscapes form a gradient that reveals both an array of major and minor human alternations of nature and a categorical presence or absence of people. Where to draw a line along the gradient to separate landscapes that are "humanized" from those that are "pristine" could be argued endlessly.

Space Ambiguity

Questions of spatial scale confound the issue: how far away from an unquestioned human impact should the landscape be considered "humanized"? An illustration of five landscapes from the Yellowstone region exemplifies the point (Figure 1.1). Along the Yellowstone River near present-day Gardiner, a cluster of conical lodges, home to a group of Flathead people, rests beside the rushing water of the Yellowstone River. Beyond the immediate living space of the settlement, a vegetation of brush and grass extends over the upland terrace from which the lodges and campfire smoke remain prominently conspicuous. From the eastern flank of Sepulcher Mountain, south of the village, the human artifacts remain visible from many vantage points, although from others the swells of hills and ravines block the view. Still farther south, in the open forest of Douglas fir (*Pseudotsuga menziesii*) that drapes over the steep slopes above present-day Mammoth, only wisps of campfire smoke tell of the village, and even those may be partially hidden behind individual trees. Much farther away, amid a forest of lodgepole pine (*Pinus contorta*) on Yellowstone's Central Plateau—little visited and appearing

untouched by humans—the image of the Flathead lodges can be only mental. Taken together, these sites form a gradient, from the middle of a human settlement to a distant forest. The adjective "humanized" might be applied to only the intensely modified environment where the Flathead cook and sleep or to the entirety of the broader landscape—including the Central Plateau—of which the village is only a tiny spot. Or the point separating the "humanized" from the "natural" could be anywhere between these extremes.

Time Ambiguity

Similarly, a temporal scale of human disturbance that includes a gradient of recovery away from the disturbed condition identifies no universally recognized and categorical demarcation between "humanized" and "pristine." How long after abandonment, for example, might a hypothetical Shoshone settlement (Figure 1.1), in what is today eastern Nevada, maintain its human imprint? Circular structures of brush serve for shelter when the site is occupied, but after abandonment (as might have happened following a season of hunting and gathering in the surrounding area), the forces of nature would gradually mute, even erase, the effects of people. The dead brush walls would collapse and decompose; rabbitbrush (*Chrysothamnus*) would establish on the former living site; sagebrush (*Artemisia*) and perennial grasses might subsequently increase amid the rabbitbrush; and small juniper trees (*Juniperus*) could germinate, then mature into a woodland cover. Evidence of the former village might persist either in the vegetation (plant covers may long maintain characteristics of major disturbance events) or in the soils altered by campfires or wastes. We can only arbitrarily decide, invoking differing criteria, if and when the humanized characteristics have been replaced by those of nature, thereby rendering the landscape "natural."

Beyond the Ambiguities

The three gradients suggest no single way of defining the critical adjectives of "humanized" and "pristine." For purposes of landscape protection and management, however, a working definition emerges from a simple (albeit difficult-to-answer) question: For any particular area of America (and anywhere else, for that matter), did (and do) the fundamental characteristics of vegetation, wildlife, landform, soil, hydrology, and climate result from natural, nonhuman processes, and would these characteristics exist whether or not humans were (and are) present? (See Vale 1998.) In attempting responses to the query, different people might quarrel over the meaning of "fundamental" or

choose to emphasize one part of the natural world over others. Nonetheless, such a question invites empirical study and assessment that leads toward appreciation of the presence or absence of human impacts, including those that are local and immediate as well as those that begin at specific loci and propagate through landscapes, à la the effects of keystone species (Power et al. 1996). Most generally, attempts to answer the question, in detail and for particular places, should elevate the dialogue from its current domination by arm-waving, careless generalizations.

Even this sort of empirical enlightenment, however, will not erase differing interpretations. Disciplinary training, specialized interests, and individual predilections: each contributes to the myths and metaphors with which we interpret the world (Botkin 1990) and each influences where different people see the boundary between the two categories of humanity and nature (Box 1.1). Anthropologically minded observers with biases toward human institutions and cultural behaviors may want to push the point of demarcation that separates

BOX 1.1. Characteristics that may tend to encourage individual observers to see the pre-European North American landscape as "pristine" or "humanized."

The two-part classification of characteristics is tentative and speculative: the array of characteristics in each group may lack internal consistency, and individuals who identify themselves as strong believers in either the "pristine" or the "humanized" viewpoint may find appealing particular characteristics in the opposing group. One pairing—equilibrium models linked to "natural" nature and nonequilibrium models linked to "humanized" nature—should not be seen in isolation from other pairings in the table. The equilibrium view encourages a belief in pristine landscapes because the two are so intertwined in historical thought (Bodkin 1990) and remain linked in much popular imagery of "the balance of nature"; for example, Interior Secretary Bruce Babbitt extolled restoration projects as efforts to reestablish landscapes with "a presettlement equilibrium" (quoted by Kloor 2000). By contrast, the nonequilibrium view is commonly invoked by those who wish to incorporate humans into nature (Pickett and McDonnell 1993), even to the point of dismissing attempts to protect natural landscapes (Zimmerer 2000). Nonetheless, modern physical geographical, ecological, and nature protectionist sentiment is dominated by nonequilibrium views, testimony to some of the other pairings in this table.