



DRAFT

MEMORANDUM

Date: May 23, 2000

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: ***Cultural Landscapes -- Relationships Between Land and People***

The attached report from Statistical Research Inc. (SRI), written to develop the Cultural and Historic Resources Element of the Sonoran Desert Conservation Plan, provides an introduction to a method used by anthropologists and archaeologists called the *cultural landscape approach*. SRI will publish two reports in the next weeks that utilize this approach by reviewing the cultural landscapes of the historic and prehistoric periods of Southern Arizona. To introduce the topic and provide some background on how archaeologists reconstruct the stories of past cultures from the hints left on the land, the attached report explains the theory of the cultural landscape approach.

The different residents of Southern Arizona over time have held different, and sometimes conflicting, conceptions of land use. These views of land use have been tied to the moral and ethical belief systems -- to the cultures -- of the various occupants through time. The authors of the attached report describe how the archaeologist tasked with making sense of a landscape from Archaic to modern time will find "a jumble of prehistoric and historical-period peoples who perceived the environment in extremely different ways, creating an archaeological record replete with competing sets of land-use practices." Viewing this same scene through the cultural landscape approach however can "sort out these different perceptions and their concrete results in the archaeological record."

The components of a cultural landscape are described in four ways, moving from most to least tangible. The first dimension that might be apparent to the archaeologist is reflected in physical modifications to the environment such as landmarks and landscape signatures. There is also a historical domain that reflects the activities carried out by the residents of the landscape being analyzed. A third view is one that explains how the residents of the landscape interacted with their environment, and the fourth layer of analysis explains how residents of the landscape understood their environment.

Future reports will utilize the cultural landscape method to relate the experiences of the Hohokam, Tohono O'odham, and non-Indian residents of Southern Arizona, describing and comparing land use practices associated with dwelling, governing, securing food, and carrying out belief systems. Introduced here, the method provides a useful tool for understanding the fact that different Southern Arizona residents over time have held vastly different views of land use. More importantly, as we begin to see why these differences have existed in the past, we might find that it is not only possible but necessary to honor diverse and deeply held land ethics within our land use plans of the future.

Regional Synthesis of Cultural and Historical Resources

Pima County Sonoran Desert Conservation Plan

**Relationships between Land and People:
The Cultural Landscapes Approach in Archaeology and History**

Submitted by

Statistical Research, Inc.

P.O. Box 31865

Tucson, AZ 85751

May 2000

Relationships between Land and People: The Cultural Landscapes Approach in Archaeology and History

Stephanie M. Whittlesey

Archaeology inherits the earth; most places contain the debris and cradle the memory of innumerable past events.

—David Lowenthal (1985:238)
The Past Is a Foreign Country

By understanding the interrelatedness of our natural and cultural landscapes—and of the people, creatures, and plants who call those places home—perhaps it is possible, despite our past history, to become better stewards of the land and better caretakers of our fellow human beings and compatriot life forms. By appreciating the everyday places of our existence, as well as the spectacular places we often can only imagine from afar with the aid of words and pictures, it is possible for us to comprehend what is at risk when we fail to care for those places properly.

—Thompson (1995:xiv)

Anthropologists and archaeologists today have come to use a new approach, a new way of thinking about how past and present peoples relate to their environment. Called the cultural landscapes approach (sometimes also called cultural landscapes theory or the cultural landscapes paradigm), this new field of inquiry is helping archaeologists to understand how the environment of southern Arizona shaped the lives of its ancient peoples and how in turn people altered the environment to suit their needs.

This report provides an introduction to the notion of the ancient landscapes of the Sonoran Desert. In subsequent reports, we attempt to describe the landscapes of the Hohokam, who lived in the Arizona deserts some thousand years ago; the modern Native Americans who are the descendants of the original inhabitants of this land; and the European, Asian, and African peoples who settled here and came to call it home. Because this approach is new, we need to take some time to explain it so that our readers will comprehend the approach and what we are trying to achieve by using it.

The landscape surrounds us—it is everywhere. It is not an academic abstraction divorced from daily life. The landscape can be seen as the sedimented history of human-environment interactions over the millennia. Not unlike the layer-cake stratigraphy of the geologist's sedimentary history, the history of the landscape lies in layers that can be peeled back one by one and read. Or to use another, possibly better analogy, landscape is a palimpsest—an ancient document that has been written upon, erased, and rewritten upon many times. The first words written may be almost illegible and indecipherable. It is the archaeologist's job to read the traces of the landscape. Archaeological sites can be seen as windows into the landscapes of the past. They represent pieces of landscapes superimposed on landscapes (Roberts 1996).

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 2

As David Lowenthal (1985:239) wrote in *The Past Is a Foreign Country*, the earth is "a geological and archaeology treasury." Downtown Tucson is perhaps the best example of this layering of landscape history. Today's urbanized landscape is a complex of tall, modern buildings, parking garages, busy city streets and sidewalks. Underneath this concrete landscape lies the remnants of Tucson as it was at the turn of the nineteenth century, with its cemeteries containing the graves of people who were killed in Apache raids, its Chinese neighborhoods, its trash pits and wells and privies containing archaeological treasure—the vanished world that was pioneer and Territorial Tucson. Dig a little deeper, and there are the walls of the Presidio de San Agustín del Tucson founded by the Irish captain Hugo O'Connor in 1775. Still deeper are Hohokam pit houses a thousand years old.

Each of these represents a piece of the landscapes of the past, holding clues to how people adapted to the southern Arizona desert, how they perceived and cared for this land. As Alanen (1995:140) wrote, "To determine what landscape is, it is imperative to know what landscape was. This is the tenet of the landscape historian." Scholars, writers, and artists must eventually connect the threads of the past to the present and create a fabric that displays the diversity and richness of southern Arizona's past and present landscapes. That is our goal in this overview of the prehistory and history of southern Arizona.

The word "landscape" has many meanings. Most of us immediately think of lovely, rural settings and paintings of these places when we hear the word. This indeed represents its origins, which began as an early-seventeenth-century term, originally spelled "landskip," for a painting or drawing of a countryside scene, as opposed to a picture of the sea, a person, or a building (Little 1995:ix). But landscape has come to mean much more than a simple, scenic view that can be appreciated for its artistic qualities, and the term is used differently among the various disciplines that study things that have been called landscapes. Geologists speak about landscape and mean only features of the land surface and rocks, and "landscape evolution" as they use it refers to the processes by which these features came to have their physical properties. Landscape architects are concerned with buildings, parks, and creating the physical settings of human habitation. Geographers use the term landscape in many different senses. Other social scientists often employ the word metaphorically, and we will hear references to the "economic landscape" or the "engendered landscape," for example. In cultural anthropology and archaeology, landscape has a particular meaning, although we often use it in a metaphoric sense as well. By speaking of *cultural landscapes*, we emphasize the heart of the construction. A cultural landscape is not only one created by people, it is one created by culture.

A cultural landscape is simultaneously the product of nature and of human interaction with nature. It is the result of people living with the physical environment, interacting with it and modifying it in myriad ways, and modeling their worldview, ideology, and cognition upon the land. The resulting cultural landscape is a seamless blending of culture and nature. Cultural landscapes are shaped by the general mental template that societies use to understand the ways in which the world works, as well as by people's actions and various physical and

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 3

natural processes that shape the world. The result is culture transformed, given substance and integrated into the corporeal world. Archaeological landscapes are the cultural landscapes of the past reconstructed from the archaeological record. The archaeological record can be viewed as a layering and intermingling of the cultural landscapes of the past, some of which were produced over a short time and others over a much longer time. We can define the study of cultural landscape most broadly as *a holistic anthropology of place*.

Defining the Landscape

It is perhaps easier to define landscape in terms of its constituent features, arriving at a definition of the whole after we have discussed its parts. There are three building blocks of a cultural landscape of the past or present—land, people and their cultures, and the interactions between land and people, which create the landscape.

A landscape, whether it is a contemporary one or an ancient one from the past, begins with the land and its plant and animal occupants and with climate. The physical environment includes the landforms and topography, geological formations and rocks, rivers and streams. It also includes the history of these physical characteristics of the land. As geologists will tell us, time is important in creating the physical character of the land. Diverse volcanic, erosional, depositional, and tectonic processes operating across the eons have created and shaped the earth's crust. Although these processes move at rates too slow for human perception, the land's history can be read by those trained to perceive its slow progress. Importantly, the physical environment is constantly changing (Ritter 1995). Climate is part of the physical environment, too, and is partly the product of geographic location on the globe and partly a product of topography and landform.

The plants and animals that populate the land form the biological environment. As Hart (1995:28) has reminded us, plants are the essential intermediary between the mineral and animal worlds. Although climate is one of the most important factors in creating plant distributions, within each climatic region there is enormous variability in response to differences in elevation, slope, soil, exposure, drainage, and other factors. We see this most vividly in our Sonoran Desert vegetation, as the drive up to Mt. Lemmon on the peaks of the Santa Catalina Mountains will demonstrate to any doubting individual. Animals are mobile, of course, but they must remain near the sources of their plant foods and the food animals dependent upon these plants. The interrelationship of all of these aspects of the physical and biological environments is typically labeled an ecosystem. The biological inhabitants of earth have histories just as the physical environment has a history, although it is written on a more readily apprehended scale.

The features of the biological and physical environments provide the raw material for landscape construction. In the process of living with the land, in the course of their daily activities designed to help them survive, people use the environment, build things upon it, and

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 4

modify it in numerous ways. People collect wild plants and hunt animals, and use rock and wood to build houses. They quarry stone for tools and buildings and walls. They build irrigation ditches and dams and headgates to water their fields and their livestock. Many of these activities leave physical traces that form the cultural landscape. People also change the environment, sometimes in drastic ways, which in turn affects human uses of the land.

Sometimes these changes are subtle, and sometimes they are obvious and dramatic. Subtle changes include shifts in the distribution of plants and animals caused by human exploitation. For example, the Reese River Shoshone used fire to clear upland basins near their winter villages to promote the growth of stick-leaf (*Mentzelia* sp.) and amaranth (*Chenopodium* sp.) seeds that, although wild, have been deliberately sown by the Shoshone (Steward 1938:103–105). According to Thomas (1981:30), this practice “created artificially clumped resource patches, deliberately situated near the most common residential base.” These modifications may leave various physical traces that should be observable in the archaeological record. No doubt the foraging and hunting peoples of southern Arizona, such as the people who lived here during the Archaic period, created similar changes in the distributions of plant and animal species.

More dramatic changes can occur as well. In exploiting and experimenting with plants and animals, people may eventually modify the genetic code of living things into domesticated forms. Humans may also cause the extinction of entire species of plants and animals by overhunting, introducing diseases, and destroying favored habitats, requiring people to adapt by exploiting different species. The most familiar example is the hypothesis that Paleoindian hunters helped cause the extinction of large animal species such as mammoths by preying upon them too successfully (Martin and Klein 1984). Such changes in the composition of local biotic communities are visible in the archaeological record. The results of these kinds of direct and indirect modifications to the land and its plant and animal occupants are the basic data that archaeologists employ to identify past human activities.

As Alan Gussow, an artist who has devoted much of his career to representing landscapes to the public, wrote (Gussow 1995:228), the landscape is “an area of adaptation:”

The landscape is alive and changing, characterized by a constant interpenetration, each modification transforming the environment which in turn influences the forms and behavior of everything that resides within the environment. There is no separate existence. When we tamper with the physical landscape, we change the world we inhabit, and that changed world, for better or worse, changes us (Gussow 1995:228).

This emphasis on the two-way interaction between environment and people identifies the contemporary landscape approach and distinguishes it from earlier concepts of human-environment relationships. The view that humans simply occupy the earth, exploiting whatever



Natural spring was used by Tucson Hohokam to irrigate upland agricultural fields.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 5

resources some their way and adapting passively to natural forces, has no place in anthropological landscape theory.

Although it begins with the environment, the cultural landscape approach does not separate the natural world from the human world. John Brinkerhoff Jackson, who was the creator of the modern landscape movement in cultural geography, wrote that "a landscape is more than an area of attractive rural or natural scenery. It is a space or a collection of spaces made by a group of people who modify the natural environment to survive, to create order, and to produce a just and lasting society" (Jackson 1995:43). *Landscapes, then, are created by people.* There is no artificial division between "nature" and "culture" in this view. Charles Darwin laid this misconception to rest long ago—"far from being 'separate' from nature, human beings happen to be biological animals, too" (Flores 1998:36). For example, the land is a composite of forms that have come into being through the agency of wind, water, plant life—and human action. The cultural landscape approach studies "the interconnectedness of the natural and humanly constructed worlds," as Yi-Fu Tuan has said (cited in Thompson 1995:xi). It is difficult to find a physical environment that does not exhibit physical evidence of humans projecting their culture onto nature. It is equally difficult to find a human model of living with the land that ignores the physical environment.

The anthropological approach to landscape is distinguished most importantly by its emphasis on cognition, perception, and culture. How people perceive places and conceptualize their environment lies at the core of the cultural landscape. These perceptions are learned, are conditioned by culture, and differ from culture to culture. Greider and Garkovich (1994:1) reveal this in their definition of landscape as "the symbolic environments created by human acts of conferring meaning to nature and the environment, of giving the environment definition and form from a particular angle of vision and through a special filter of values and beliefs." Moreover, they wrote, "Every landscape is a symbolic environment. These landscapes reflect our self-definitions that are grounded in culture" Greider and Garkovich (1994:1). In fact, it is possible to take an extreme view and say that landscapes do not exist outside of people's perception of them. For the individual, a landscape does not exist if the individual is no longer a part of it (Rabbitt 1995:180).

A cultural landscape, then, is a cognized environment that has been created by cultural perceptions. These perceptions determine how we interact with the environment, how we exploit and preserve it, the ways in which shape it and in turn are shaped by it. The importance of cultural values and perception also means that *there is no single cultural landscape of the past or present, but as many different landscapes as there are cultures*, and even potentially numerous variations within a single culture. And this is a good thing. As Flores

(1998:36) expressed it, "diversity in human culture just may be almost as important to adaptation and evolution on earth as we have long believed ecological diversity to be. In the best philosophical sense, choosing between humans and nature is a non sequitur."

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 6

Language is a crucial part of culture and cognition. It is through the naming and identification of particular topographic features that their identity is established and maintained. Names create landscapes in a fundamental way (Tilley 1994:19). Keith Basso (1996) has presented a carefully considered and well-written exposition of the relationship between landscape and language among the Western Apache.

In the landscape, then, we can often read the underpinning of perception and symbol, ideology and religion. Leone (1984:26) described the interplay between ideology and landscape well.

Ideology takes social relations and makes them appear to be resident in nature or history, which makes them apparently inevitable. So that the way space is divided and described, including the way architecture, alignments, and street plans are made to abide by astronomical rules, or the way gardens, paths, rows of trees, and vistas make a part of the earth's surface appear to be trained and under the management of individuals or classes with certain ability or learning, is ideology."

Landscapes also reflect the political order and social organization of human societies in various ways. Public spaces, for example, are rich in symbols and images that remind people of their civic duties and privileges—what Jackson (1984) called the political landscape. The mill town of Lowell, Massachusetts, for example, reflects directly in its buildings and the organization of the built environment the upper-class and lower-class relationships that structured the mill society (Mrozowski and Beaudry 1990:189).

Components of Cultural Landscapes

The cultural, linguistic, and cognitive bases of landscapes have been emphasized, and these are abstract dimensions to be certain. Landscapes also have a concrete, material aspect. Jackson (1984), in *Discovering the Vernacular Landscape*, defined landscape as "a concrete, three-dimensional, shared reality." A contextual characterization of cultural landscape investigates the dimensions of landscape that are apprehensible and amenable to analysis on different levels.

The cultural landscape consists of four domains or dimensions. These can also be conceptualized as ways to analyze and investigate archaeological landscapes. The *formal dimension* refers to physical characteristics and properties—the physical modifications and changes to the environment (landmarks or landscape signatures). The *historical dimension* focuses on the life histories of cultural landscapes that embed layers of human activities in the land. The *relational dimension* focuses on organization, linking humans and the environment at a variety of scales. The *cognitive dimension* describes the ways in which people view the environment and their interactions with it. In addition, we must determine what units of

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 7

analysis we will use and on what scale we will investigate cultural landscapes. Each of these is discussed in turn, beginning with scale.

Scale and Units of Analysis

Investigations of landscapes are undertaken at specific spatial and temporal scales. According to Marquardt and Crumley (1987:7), "[T]he concept of *scale* activates both human-environmental relations and our study of those relations. Just as specific models of reality are conceived, negotiated among human groups, and applied at specific scales, so are our investigations of landscapes undertaken—and the results of our studies applied—at specific spatial and temporal scales" [emphasis in original]. A landscape can be as small as a single dwelling or even a room. Historical archaeologists often investigate buildings, villages, and gardens at such small scales. At the other end of the scale are nations or even continents. Scholars dealing with issues of world economy or globalization (e.g., Wallerstein [1974] or Hardesty [1999]) must investigate cultural landscapes on such extremely large scales. Archaeologists most commonly study landscapes at a scale falling somewhere in between these extremes, however.

Archaeologists most commonly deal with regions, which usually are defined by topographic and hydrological features, or with smaller geographic units. Regions are not easily defined or straightforward conceptions, and archaeologists have struggled with adequate definitions of regions for a long time. People are mobile, and most prehistoric peoples highly so, making it difficult to draw boundaries around a specific territory and call it a region. Archaeologists need to employ criteria in defining regions that are specific to research issues (Marquardt and Crumley 1987).

In contemporary studies, regions can be defined as provinces, states, counties, and so forth (e.g., Chang 1992). Archaeological regions are often defined in terms of project boundaries. For example, we can discuss the landscapes of the lower Verde Valley as defined by the limits of the Lower Verde Archaeological Project (Whittlesey et al. 1998). In subsequent reports, we will discuss the past landscapes of the Tucson region, loosely defining it as the Tucson Basin, the mountain ranges that define the basin, and the river valleys adjacent to it. Frequently regions are defined still more loosely in cultural terms. We can speak of the "Hohokam region" and mean all areas where Hohokam people once lived, which includes most of central and southern Arizona.

Time is an important scalar dimension, too. Jackson (1995) reminds us that each landscape is not simply an organization of space, but also an organization of time—or more accurately, every landscape reveals a concept of time as it relates to space. The archaeologist's time scale is typically coarse in comparison to the time frame of the people who created a landscape. Hunting and gathering peoples, for example, move across the land on a daily basis, move from place to place each season, and complete a cycle of movement across a large amount of

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 8

territory in the course of the year. The archaeologist certainly cannot comprehend daily movement, and possibly not even seasonal mobility. Archaeology is most effective in examining long-term accumulations of human interactions with the environment that are commonly referred to as sites. Rossignol and Wandsnider (1992) bring together a collection of articles that examine archaeological landscapes at many different scales, and many of the articles provide good discussions of definitions of and limitations in using temporal and spatial scales (e.g., Stafford and Hajic 1992).

It is important to recognize that most archaeological reconstructions of past landscapes deal only with fragments or pieces of the ancient landscape, which by definition cannot be taken as representative of the whole. This is a limitation that we recognize. It illustrates the importance of long-term, large-scale research projects and the cumulative interpretation of smaller studies. We always build on the past, in many different senses. That is one reason why archaeology is never finished, is always seeking new venues and new sites to investigate. Each new study provides yet another piece of the puzzle.

The Formal Dimension

Humans modify the environment in a variety of ways. The interactions between people and the environment leave material traces and modifications of many kinds. Marquardt and Crumley (1987:7) call these modifications "landscape signatures," which are "the material imprints left on the earth's surface by particular constellations of human groups," and Zedeño et al. (1997) define "landmarks" as places where interactions between people and environmental features take place. This formal dimension of cultural landscapes is the most easy to recognize and most amenable to archaeological study. We can all recognize features of the built environment, for example, such as houses and roads.

To categorize the formal dimension of landscapes, Zedeño (1997) has developed a formal spatial typology. What she calls "living space," for example, refers to habitation and to the modifications that people create to live on the land, such as houses, buildings, and so on. Jackson (1984) called this the "inhabited landscape." "Ritual space" refers to ceremonial structures, shrines, and other landscape modifications relating to religious performances and beliefs. To create living or dwelling space, people may directly modify the land through timber cutting for construction and fuel wood; to create food production space, they clear land, plow the soil, and build irrigation systems. In creating communication space, we build railroads, roadways, and trails. Zedeño's approach logically evolves into a functional typology of the formal features of landscapes.

Although many landscape modifications are visible archaeologically as sites, not all modifications involve sites. In some cases, landmarks may be unmodified by human activities. Indeed, the most sacred landmarks may be off limits or taboo to human use. Examples of unmodified landmarks are the sacred mountains that are central to Navajo, Tewa, and Hopi

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 9

cosmology (McPherson 1992; Ortiz 1969; Waters 1963). People involve themselves in the landscape at this level simply by observing it (Basso 1996:73). Material culture may be deliberately or inadvertently deposited at such unmodified landmarks—offerings to the spirits, or objects accidentally left in the course of visiting these places. Such landmarks can be recognized by spatial analysis of their interconnectedness and physical character (e.g., Tilley 1993, 1994).

Archaeologists have long recognized the importance of so-called isolated finds and nonsite archaeological phenomena (Dunnell 1992), but find them difficult to deal with, particularly in the site-oriented world of cultural resource management. Sites, isolated finds, and unmodified landmarks must be studied together on a regional basis if landscapes are to be reconstructed most fully.

Schlanger (1992) provides an example of how this can be done from the Dolores region of southwestern Colorado. She used isolated finds, sites, and abandoned feature data collected during regional survey to reconstruct "persistent places" among the prehistoric Anasazi inhabitants of the region. Persistent places are defined as places that were used repeatedly during the long-term occupation of a region. They are neither strictly sites nor features of the physical environment, but are "the conjunction of particular human behaviors on a particular landscape" (Schlanger 1992:97).

The Relational Dimension

The relational dimension, which focuses on the organization of cultural landscapes, is the landscape dimension with which archaeologists are most familiar. The interactions among people and the various elements of the social and natural environments represent the relational dimension, and its building blocks are landscape modifications—sites, isolated artifacts, and unmodified landmarks—and their placement with reference to the physical environment. The interactive links connecting people and environmental features may be behavioral, social, or symbolic, and may or may not leave physical traces.

Environmental modifications and the landmarks that record interactions among people and between people and places are not mutually exclusive. Food procurement and ritual activities and the physical spaces in which they are carried out may overlap. For example, an area used for collecting medicinal plants may often be considered a sacred place; a dwelling may be used as a burial place, combining living and ritual space. For the Hohokam of southern Arizona, we think that the place where they collected the micaceous schist used to temper their culinary pottery—Gila Butte near modern Sacaton just south of Phoenix—was also an important landmark with sacred connotations.

Hohokam cremation cemeteries, clearly a type of ritual space, were integral parts of the household groupings archaeologists label house clusters, which also included trash mounds

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 10

and outdoor activity areas. A critical task when investigating cultural and archaeological landscapes is to plot the distribution of the overlapping activities, their spatial elements, and the links among them.

This dimension is similar to traditional settlement-pattern analysis, in which archaeologists often look at the distance between sites and the patterns of organization that link them. What is the degree of nucleation or dispersion across the land? What features of topography, rivers, soils, or vegetation communities influence site location? How does site function relate to these features? The nature of the resource base, type of settlement system, population size and density, sharing, and territoriality are related in complex ways. The organization and scheduling of activities in space are important components of the relational dimension and of traditional settlement-pattern studies (e.g., Thomas 1973, 1974, 1981).

By using locational analysis of settlement pattern, it is possible to determine what types of physiographic or geomorphic features represent landmarks and identify land features that did not represent landmarks. Patterns in the location of archaeological sites relative to physiographic features can be particularly informative. Recurrent interconnections—trails, pathways, line-of-sight location—between landmarks and other types of sites may also help define landmarks.

Another way of accessing the relational dimension is through technology. Technology is one of the primary ways in which people interact with the environment; it provides a useful tool for studying the history of human-environment interactions and their cumulative effects.

The Historical Dimension

Landscapes have life histories that illustrate the processes by which the land is transformed and becomes an architectural form itself. The landscape is both medium for and outcome of action and previous histories of action (Tilley 1994:23). As we have seen, landscape also includes a temporal dimension on a variable scale. All settlement is a product of time, and historical explanation on some level is a necessary ingredient of settlement analysis (Roberts 1996:10). A primary goal of archaeological landscape reconstruction is to read the history of human-environment interactions through time, and the temporal dimension with which archaeology typically deals is the best tool for such reconstructions.

The history of human-environment interactions can be read most easily in landscape modifications. Most typically, these take the form of archaeological sites. The history can also be read in the environmental history of any place where people have settled, used environmental resources, or modified the land. People dam rivers and change their courses; as we have seen, people modify the distribution of plants and animals and even extirpate them. In farming the land, people add nutrients to the soil and change its physical properties; continuous farming will deplete the soil of nutrients and reduce its fertility drastically. These

interactions can be read by a variety of analyses that study the chemical and physical properties of soils, geomorphology and landforms, the ancient pollen record (palynology), and archaeological plant and faunal remains.

The historical dimension of landscape study is important for another reason. As we have emphasized, human-environment interactions are dual, and what affects one affects the other. Many human activities may have unintended consequences, which may influence people's ability to live with the land in the future. As Gussow (1995:225) expressed it, "Our landscape is more than a passive backdrop to human events—it is a stage on which we move. The objects and forms on that stage shape our actions, guide our choices, restrict or enhance our freedom, and in mysterious ways even predict our future." "Landscapes often are archaeological expressions of . . . cultural transformation" (Hardesty 1999:218).

The goal of cutting down trees is not to denude the forest, for example, but to use timber in culturally meaningful and necessary ways. The net result of this activity, however, may well be deforestation, which in turn alters the landscape in ways that people may not have anticipated, creating consequences that will impinge on human behavior and decision making in the future. Not only does the obvious outcome—the loss or severe reduction of a critical resource—affect people, but there may be additional consequences with more profound, long-term effects on the human population. For the Hohokam, clearing land to create agricultural fields was a necessary activity with a number of unintended consequences. One was in the distribution and densities of the animals that formerly made the dense, mesquite bosques of the riverine floodplains their home (Szuter 1991)—affecting the availability of game and the distance traveled and time spent in hunting. The depletion of fuelwood may have been one factor prompting the relatively rapid shifting of large settlements. In other parts of prehistoric Arizona, fuelwood depletion was one factor in the abandonment of entire regions (Reid 1989).

The consequences of environmental modifications are most easy to see in the modern world, as pointed out by Crumley and Marquardt (1990:73):

In interacting with their physical environment, people . . . make decisions and expend energy according to their own mental models of how the world operates. To the extent that such models are always partial, unintended consequences may result from human action. For example, we consciously extract coal to provide energy for domestic consumption and industrial production; in the process, we unintentionally produce acid rain, which may have a long-term deleterious effect on agriculture and, eventually, on the health of our own society.

Landscapes, then, have life histories. These are the products of a complicated interplay among different kinds of processes. First are the historical, environmental processes that affect



*Upper Sonoran Desert: Catalina Mountain
foothills*

Prehistoric agricultural rock pile features.



*Agave growing in prehistoric agricultural rock
pile fields.*



Cultural Landscapes - Relationships Between Land & People

May 2000

Page 12

landforms, such as erosion and alluviation; long-term changes in climate that may affect the distribution of plants and animals; and short-term fluctuations in precipitation and temperature. Second are human modifications to the land and changes in the ways humans relate to and modify the environment. These are never static, but always ongoing and shifting. Third are the multiple, interactive effects of these relationships and the alterations to the environment caused by human activities, whether intended or unintended. Because of this historical content, landscapes are an important source of information about past and present culture and cultural transformations. In the landscape we can read forces of development and evolution, political and social forces that shape human destinies, and the tensions between transformation and continuity.

The history of contemporary cultural landscapes is best accessed through oral history, for landscape history is often made manifest in language, myths, and creation stories. This is illustrated best in Basso's (1996) study of Western Apache landscapes, which was accessed through interviews with living people and recording their stories in their own language, particularly their names for places on the landscape. Archaeologists unfortunately do not have this option. Even so, the history of places should be visible in at least some aspects, permitting archaeologists to define how people interacted with places even though they might not be able to know the particular myths, stories, or names associated with those places.

The Cognitive Dimension

As we have emphasized, cultural landscapes have an important perceptual and cognitive dimension, one which is admittedly the most difficult to access, particularly for archaeologists. Yet this aspect of cultural landscapes is perhaps its most important, with the most significant consequences for the long-term survival of human groups. People attribute meaning to landscapes and to the environmental features characterizing landscapes, but meaning is defined on a diverse and variable human scale. There is no universal significance to particular landforms, for example, although many cultures the world over revere mountains for their spiritual and religious significance. Our ability to apply a cultural landscape approach in archaeology rests in part on identifying and employing scales of analysis that permit us to define and consider the variable meanings and functions of environmental features and modifications.

The importance of perception in a cultural landscape approach cannot be overemphasized. Joseph Meeker put it into terms that are readily understood. He wrote (Meeker 1997:5-6):

[H]owever the human mind imagines the world, that is how the world tends to become for humans. If we think of the Earth as a farm, then we behave as if it were one; if we imagine that the Earth is a spaceship, then we manipulate and direct its path toward our chosen goal. Human mentality is applied to the Earth according to the model we have adopted to explain it to ourselves.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 13

Consciousness perpetuates such potent images, transposing them into new contexts and reinterpreting their meaning from generation to generation. That is what a cultural tradition does, and our institutions exist in order to pass such models along.

The importance of meaning is best illustrated by the differing conceptions of landscape in the American West. The contrast and even conflict among landscapes and their meanings has been the heart of the western experience, particularly in the opening and reopening of the American West over the course of the past two centuries. The pioneers who first traveled through the West's open and illimitable spaces endured the emotional and psychological impact of finding themselves alone in an unknown landscape. Not only was it unfamiliar, it was dangerous. Danger was manifest everywhere, in the form of the Indians who were prompted by the invasion of their own territory into defending it in harsh ways, from the terrifying beasts who inhabited the land, from the cold and the altitude and the heat, the storms and the floods.

Feltskog (1995:85) described the impact upon the emigrants well. "In a journey without maps into a landscape without definition," he wrote, "the inevitable psychological process. . . was displacement from familiar landscapes and established identities, and ultimate sense of loss and of being 'lost' physically at first and emotionally and consciously at last." Physical illness, "mountain fever," and starvation were real dangers, but were "only accompaniments to the terrible isolation forced upon the solitary self in that immense landscape of prairie and sky." The vision he painted even now is frightening: "Only bison skulls and the occasional lonely grave of an emigrant—and the wheel-ruts of the Trail—marked the journey [the traveler] had to take alone" (Feltskog 1995:85).

The fundamental disjuncture between Native American and Euroamerican conceptions of the landscape was the core of conflict between these peoples (Whittlesey 1998b). Whereas aboriginal peoples created a cultural landscape rich with meaning and stories, one that reflected cultural identity in an intimate and real way, Euroamericans moving across the country saw the land in terms of profit. It was something to be divided up and exploited; nature was not revered for its spiritual qualities and connections, but was repeatedly assaulted and defiled (Ambrose 1996; Sheridan 1995). Whereas many Native Americans viewed the land as a vast, unbounded territory through which they moved more or less at will, bound only by the constraints of season and resources and the distribution of other peoples, Americans conceptualized land as subdivided into discrete geopolitical identities. Parcels of land not only were occupied, but owned, bought, and sold. This clash between cultural landscape values prompted the most bloody confrontations between native and nonnative peoples in American history (Whittlesey 1998b).

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 14

Cultural Landscapes: Some Examples

Our best examples of cultural landscapes come from southwestern ethnography. The Native Americans who dwell in the Southwest have long had a richly intertwined relationship with the land. Landscape is part of their history and cosmology. It is an educational tool as well as a means of living. Stories about the land feature prominently in religion, ideology, and mythology. Much of the following discussion of Pueblo landscapes of New Mexico is abstracted from Silko (1995), who is from Laguna Pueblo. Although the Pueblo example is particularly compelling and has been used here for this reason, similar landscapes have been created for and by the Native Americans living in southern Arizona. We will turn to these landscapes in later sections of the cultural resources overview being prepared for the Sonoran Desert Conservation Plan (SDCP).

Survival in the Southwest is predicated on people's ability to live in harmony with land and all living beings. The land and climate are unpredictable, often unreliable, and it is a harsh land. Cooperation among people, plants, and animals—even the inanimate, "because rocks and mountains were known on occasion to move"—was necessary if humans were to survive and prosper. Hence the Pueblo people's "relentless attention" to the sky and earth around them (Silko 1995:157).

The proper ways to cooperate and live in harmony with the earth, sky, and its living creatures were handed down through Pueblo oral narrative, the collective memory by which successive generations maintained and transmitted the knowledge and worldview complete with proven strategies for survival. For example, stories about deer hunting were designed not only to amuse and entertain but also to educate. They might contain critical information about the behavior and migration patterns of mule deer and how to recognize the places where deer went for water and food. A story is thus a kind of "map." Silko (1995:140) wrote that "Lost travelers, and lost piñon-nut gatherers, have been saved by sighting a rock formation they recognize only because they once heard a hunting story describing it."

Each landform or rock formation holds a story, and the story often holds moral and ethical truths for the Pueblo people as well as important survival information. The stories usually are linked to heroes or gods, and illustrate important notions of cosmology and ideology. In visiting a landscape feature the people are reminded of its story and of the spiritual and moral lessons it encodes. Thus the landscape is a sort of educational tool, a teacher of beliefs and of the right way to behave. Silko (1995:160) describes a huge sandstone boulder that represents the heart of a monster slain long ago by the Twin Hero Brothers. Each time she passed this rock as a child, she was reminded of the story. When the landscape features or a trail linking them traces important stories, such as the ritual of the creation and emergence of Laguna people and culture, the use of those features or routes takes on a deeper significance linking the spiritual or mythic dimensions of the Pueblo world with the everyday dimension.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 15

McPherson (1992:11) describes this aspect of landscape well as it applies to the Navajo peoples. He wrote, "The land with its water, plants, and animals is a spiritual creation put into motion by the gods in their wisdom. These elements are here to help, teach, and protect through an integrated system of beliefs that spell out man's relationship to man, nature, and the supernatural. To ignore these teachings is to ignore the purpose of life, the meaning of existence."

This mutually reinforcing effect of landscape and culture is beneficial. "Thus, the continuity and accuracy of the oral narratives are reinforced by the landscape—and the Pueblo interpretation of the landscape is maintained" (Silko 1995:161). Moreover, the stories "delineate the complexities of the relationship that human beings must maintain with the surrounding natural world if they hope to survive" (Silko 1995:163).

The plant, animal, and inanimate resources that people require and the earth, sun, and rain that nourish all life are certainly prosaic commodities that are needed to sustain human life. But in Pueblo culture their vital importance to human survival is recognized in terms of a code of proper behavior. Humans depend upon the aid and charity of animals, as indicated in the Pueblo emergence stories that tell of reliance on animals in the journeys upward to the contemporary world. Because simply to survive is a great triumph, humans need all the allies they can collect. It is therefore necessary to treat all life with respect, and even the most humble of creatures must be addressed with dignity.

The Pueblo worldview creates a landscape that is organized according to this perception. The territory the Pueblos occupy is marked by four sacred mountains, one at each point of the compass. (This is also true of the Navajo peoples; see McPherson [1992]). The territory was created by the gods as the home of the Pueblo peoples, theirs by sacred right to occupy and also their by sacred obligation to care for and protect. The mountains serve as protectors and symbols of home. The symbolic focal point or center of this landscape is the Emergence Place, usually a spring, that reminds the people of their emergence into a precise cultural identity, their connection with the life-giving source of water, and their spiritual history.

Surrounding the most sacred of spaces, the shrine within the Pueblo village itself, are three concentric zones that define the realm of everyday activities (Jackson 1995). The frontier region is the outermost zone, the domain of the men, who use it as a resource zone for hunting and collecting construction timbers, and who must maintain the shrines and lakes associated with the ancestors and spiritual beings. The next ring was the large domain of foothills, canyons, and valleys in which the men and women of the pueblo regularly collected the plants and inanimate resources used as food, as medicine, and in crafts. Ortiz (1969) calls this the zone of the flat-topped hills. Certain supernatural beings live there, and according to Ortiz, women and children are not permitted to venture beyond its boundaries. These lands are what would be called in Europe the commons—an area open to use by all the inhabitants of the community for satisfying their domestic needs (Jackson 1995; McCay and Acheson 1987). The innermost zone contained the agricultural lands and the streams that watered them. The

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 16

center was the village, home, containing the shrine in the plaza that was variously called the Earth Mother, Earth Navel, or Middle Place (Jackson 1995).

The landscape sits at the core of Pueblo belief and identity. Who they are, as a people, is bound up with where they live. For this reason, among others, the Pueblo people are loath to give up their land or see it impacted by modern activities such as mining. Such things disturb the earth, and do not show proper respect for it. As Basso (1996:62) has pointed out with reference to the Apache people, "Losing the land is something the Western Apaches can ill afford to do, for geographic features have served the people for centuries as indispensable mnemonic pegs on which to hang the moral teachings of their history." Whittlesey (1998a:28) describes what happens when indigenous peoples are removed from their native lands. "Conflicts over land rights, the moral and social ills that afflict uprooted Native Americans, and the cultureless anomie of the urban Indian, are symptomatic not of the loss of culture, but of the loss of land."

Landscapes are not restricted to Native American cultures, or other traditional cultures of the past, although modern and ancient Indian peoples have provided us with some of the best examples of cultural landscapes. There are contemporary and historical-period landscapes, as well. When we look at the history of the American West we see many landscapes that have been created by the diverse peoples, ethnic groups, religious sects, and cultures that have made the West their home. For example, Leone (1973) has created a model of Mormon landscapes in the American West, which describes how Mormon emigrants actively worked to transform the desolate desert into a Garden of Eden that reflected cultural concepts of cosmology, religion, and ideology (Hardesty 1999:218). Feng shui landscapes associated with Chinese immigrants to the West are another well-documented example of the relationship between ideology and landscape (Hardesty 1999:218).

Why Cultural Landscapes?

Archaeology has long been a discipline interested in the relationships between people and their environments. The time depth of prehistoric archaeology is a good stage for examining long-term processes of environmental change and how people cope with change. The older focus of processual archaeology on cultural ecology, in which culture is seen as a human adaptive system (e.g., White 1949), is a good example. Landscapes provide excellent potential for studying change. The landscape can be seen as the product of conflict resolution. Contradictions inevitably arise as people interact with their cognized environments, use them as a stage for social and political change, and act out tensions among social groups. Such contradictions constitute the raw material of change (Marquardt and Crumley 1987:6), on which archaeologists have long been focused. Change, and adaptation to change, is what the discipline is all about. The landscape becomes "the total terrestrial context in which archaeological study is perused" (Deetz 1990:2), and landscape signatures are "the concrete, recognizable result of the resolution of contradictions that have arisen in the interactions of people with their environments" (Marquardt and Crumley 1987:7).

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 17

Further, because perception is deeply embedded in culture, and the way people perceive of the environment and act within it is culturally conditioned, landscapes embody the nucleus of stability in human cultures, that which is often most resistant to change. The most tenacious and significant cultural symbols are embedded and maintained in the landscape. Landscapes can persist even in the face of sweeping technological and economic changes (Greider and Garkovich 1994:7).

For the archaeologist, landscapes are also important because they help us reconstruct intangibles of culture and ideology that are otherwise difficult to access. As Mrozowski and Beaudry (1990:189) expressed it, "It is thus possible to gain insight into the workings of culture in terms of conscious and unconsciously shared notions of order and causality, of reason and sense in human relations, through archaeology by attending to the affective power of the built environment—the total material expressions of landscape and land use."

Using a landscape approach, the archaeologist can make sense of what can be vastly different and competing conceptions of land use through time. For example, we attempted to do this in the Lower Verde Archaeological Project (Whittlesey et al. 1998). Our task as outlined by our client was to make sense of the complicated history of the lower Verde region from Archaic to modern times—a jumble of prehistoric and historical-period peoples who perceived the environment in extremely different ways, creating an archaeological record replete with competing sets of land-use practices (Whittlesey 1998b). Using a landscape approach helped us sort out these different perceptions and their concrete results in the archaeological record. We attempt to take a similar approach in the sections being prepared for the cultural resources overview for the SDCP. In subsequent reports, we will look at different types of landscapes—that of the Hohokam, the contemporary Tohono O'odham, and the non-Indian peoples of southern Arizona—and see how these groups approached dwelling space, food procurement space, ritual space, and other aspects of the living landscape.

For further information about cultural landscapes, the reader may consult Basso's (1996) Wisdom Sits in Places: Landscape and Language among the Western Apache, McPherson's (1992) Sacred Land, Sacred View: Navajo Perceptions of the Four Corners Region, and Silko's (1995) "Interior and Exterior Landscapes: The Pueblo Migration Stories." Each of these provides excellent interpretations of modern Native American landscapes. Thompson's (1995) edited volume Landscape in America provides an excellent introduction to the diversity of view on landscapes, ranging from geological perceptions to those of dancers and artists. The contributors were asked to write about what landscape means, toward explicating the larger thesis that landscape is a point of view. Whittlesey (1998a) provides an introduction to cultural and archaeological landscapes.

References Cited

Alanen, Arnold R.

- 1995 Back to the Land: Immigrants and Image-Makers in the Lake Superior Region, 1865 to 1930. In *Landscape in America*, edited by G. F. Thompson, pp. 111-140. University of Texas Press, Austin.

Ambrose, Stephen E.

- 1996 *Crazy Horse and Custer*. Anchor Books, Doubleday, New York.

Basso, Keith H.

- 1996 *Wisdom Sits in Places: Landscape and Language among the Western Apache*. University of New Mexico Press, Albuquerque.

Chang, Claudia

- 1992 Archaeological Landscapes: The Ethnoarchaeology of Pastoral Land Use in the Grevena Province of Northern Greece. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 65-89. Plenum Press, New York.

Crumley, Carole L., and William H. Marquardt

- 1990 Landscapes: A Unifying Concept in Regional Analysis. In *Interpreting Space: GIS and Archaeology*, edited by K. M. S. Allen, S. W. Green, and E. B. W. Zubrow, pp. 73-79. Taylor & Francis, London.

Deetz, James

- 1990 Prologue: Landscapes as Cultural Statements. In *Earth Patterns: Essays in Landscape Archaeology*, edited by W. M. Kelso and R. Most, pp. 1-4. University Press of Virginia, Charlottesville.

Dunnell, Robert C.

- 1992 The Notion Site. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 21-41. Plenum Press, New York.

Feltskog, E. N.

- 1995 The Range of Vision: Landscape and the Far West, 1903 to 1850. In *Landscape in America*, edited by G. F. Thompson, pp. 75-92. University of Texas Press, Austin.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 19

Flores, Dan L.

- 1998 Environmentalism and Multiculturalism. In *Reopening the American West*, edited by H. K. Rothman, pp. 24–37. University of Arizona Press, Tucson.

Greider, Thomas, and Lorraine Garkovich

- 1994 Landscapes: The Social Construction of Nature and the Environment. *Rural Sociology* 59:1–24.

Gussow, Alan

- 1995 Beauty in the Landscape: An Ecological Viewpoint. In *Landscape in America*, edited by G. F. Thompson, pp. 223–231. University of Texas Press, Austin.

Hardesty, Donald L.

- 1999 Archaeological Models of the Modern World in the Great Basin: World Systems and Beyond. In *Models for the Millennium: Great Basin Anthropology Today*, edited by C. Beck, pp. 213–219. University of Utah Press, Salt Lake City.

Hart, John Fraser

- 1995 Reading the Landscape. In *Landscape in America*, edited by G. F. Thompson, pp. 23–42. University of Texas Press, Austin.

Jackson, John B.

- 1984 *Discovering the Vernacular Landscape*. Yale University Press, New Haven, Connecticut.

- 1995 In Search of the Proto-Landscape. In *Landscape in America*, edited by G. F. Thompson, pp. 43–50. University of Texas Press, Austin.

Leone, Mark P.

- 1973 Archaeology as the Science of Technology. In *Research and Theory in Current Anthropology*, edited by C. Redman, pp. 125–150. John Wiley and Sons, New York.

- 1984 Interpreting Ideology in Historical Archaeology. In *Ideology, Power, and Prehistory*, edited by D. Miller and C. Tilley, pp. 25–35. Cambridge University Press, Cambridge.

Little, Charles E.

- 1995 Forward. In *Landscape in America*, edited by G. F. Thompson, pp. ix–x. University of Texas Press, Austin.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 20

Lowenthal, David

1985 *The Past is a Foreign Country*. Cambridge University Press, Cambridge.

Marquardt, William H., and Carole L. Crumley

1987 Theoretical Issues in the Analysis of Spatial Patterning. In *Regional Dynamics: Burgundian Landscapes in Historical Perspective*, edited by C. L. Crumley and W. H. Marquardt, pp. 1-18. Academic Press, San Diego.

Martin, Paul S., and Richard G. Klein

1984 *Quaternary Extinctions: A Prehistoric Revolution*. University of Arizona Press, Tucson.

McCay, Bonnie J., and James M. Acheson (editors)

1987 *The Question of the Commons: The Culture and Ecology of Communal Resources*. University of Arizona Press, Tucson.

McPherson, Robert S.

1992 *Sacred Land, Sacred View: Navajo Perceptions of the Four Corners Region*. Brigham Young University, Provo, Utah.

Meeker, Joseph W.

1997 *The Comedy of Survival: Literary Ecology and a Play Ethic*. University of Arizona Press, Tucson.

Mrozowski, Stephen A., and Mary C. Beaudry

1990 Archaeology and the Landscape of Corporate Ideology. In *Earth Patterns: Essays in Landscape Archaeology*, edited by W. M. Kelso and R. Most, pp. 189-208. University Press of Virginia, Charlottesville.

Ortiz, Alfonso

1969 *The Tewa World*. University of Chicago Press, Chicago.

Rabbitt, Thomas

1995 A Flat Rock, Poetry, Perception, and Landscape. In *Landscape in America*, edited by G. F. Thompson, pp. 171-182. University of Texas Press, Austin.

Reid, J. Jefferson

1989 A Grasshopper Perspective on the Mogollon of the Arizona Mountains. In *Dynamics of Southwest Prehistory*, edited by L. S. Cordell and G. J. Gumerman, pp. 65-97. Smithsonian Institution Press, Washington.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 21

Ritter, Dale F.

- 1995 The Geological Perception of Landscape. In *Landscape in America*, edited by G. F. Thompson, pp. 61–72. University of Texas Press, Austin.

Roberts, Brian K.

- 1996 *Landscapes of Settlement: Prehistory to the Present*. Routledge, London.

Rossignol, Jacqueline, and Luann Wandsnider (editors)

- 1992 *Space, Time, and Archaeological Landscapes*. Plenum Press, New York.

Schlanger, Sarah H.

- 1992 Recognizing Persistent Places in Anasazi Settlement Systems. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 91–112. Plenum Press, New York.

Sheridan, Thomas E.

- 1995 *Arizona: A History*. University of Arizona Press, Tucson.

Silko, Leslie Marmon

- 1995 Interior and Exterior Landscapes: The Pueblo Migration Stories. In *Landscape in America*, edited by G. F. Thompson, pp. 155–169. University of Texas Press, Austin.

Stafford, C. Russell, and Edwin R. Hajic

- 1992 Landscape Scale: Geoenvironmental Approaches to Prehistoric Settlement Strategies. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 137–161. Plenum Press, New York.

Steward, Julian H.

- 1938 *Basin-Plateau Aboriginal Sociopolitical Groups*. Bulletin No. 120. Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Szuter, Christine R.

- 1991 *Hunting by Prehistoric Agriculturalists in the American Southwest*. Garland, New York.

Thomas, David H.

- 1973 An Empirical Test of Steward's Model of Great Basin Subsistence. *American Antiquity* 38:155–176.

- 1974 An Archaeological Perspective on Shoshonean Bands. *American Anthropologist* 76:11–23.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 22

- 1981 Complexity among Great Basin Shoshoneans: The World's Least Affluent Hunter-Gatherers? In *Affluent Foragers: Pacific Coast East and West*, edited by S. Koyama and D. H. Thomas, pp. 19–52. Senri Ethnological Studies No. 9. National Museum of Ethnology, Osaka, Japan.

Thompson, George F.

- 1995 A Message to the Reader. In *Landscape in America*, edited by G. F. Thompson, pp. xi–xiv. University of Texas Press, Austin.

Thompson, George F. (editor)

- 1995 *Landscape in America*. University of Texas Press, Austin.

Tilley, Christopher

- 1993 Art, Architecture, Landscape [Neolithic Sweden]. In *Landscape, Politics and Perspectives*, edited by B. Bender, pp. 49–84. Berg, Providence.
- 1994 *A Phenomenology of Landscape: Places, Paths and Monuments*. Berg, Oxford.

Wallerstein, Immanuel

- 1974 *The Modern World System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. Academic Press, New York.

Waters, Frank

- 1963 *Book of the Hopi: The First Revelation of the Hopi's Historical and Religious Worldview of Life*. Penguin Books, New York.

White, Leslie A.

- 1949 *The Science of Culture: A Study of Man and Civilization*. Grove Press, New York.

Whittlesey, Stephanie M.

- 1998a Archaeological Landscapes: A Methodological and Theoretical Discussion. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project: Overview, Synthesis, and Conclusions*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 17–28. SRI Press, Tucson.
- 1998b Landscapes and Lives along the Lower Verde River. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project: Overview, Synthesis, and Conclusions*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 703–721. SRI Press, Tucson.

Cultural Landscapes - Relationships Between Land & People

May 2000

Page 23

Whittlesey, Stephanie M., Richard Ciolek-Torrello, and Jeffrey H. Altschul (editors)

- 1998 *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project: Overview, Synthesis, and Conclusions*. SRI Press, Tucson.

Zedeño, María Nieves

- 1997 Landscapes, Land Use, and the History of Territory Formation: An Example from the Puebloan Southwest. *Journal of Archaeological Method and Theory* 4:67-103.

Zedeño, María Nieves, Diane Austin, and Richard Stoffle

- 1997 Landmark and Landscape: A Contextual Approach to the Management of American Indian Resources. Manuscript on file, Bureau of Applied Research in Anthropology, University of Arizona, Tucson.

