Classic Article

Introduction to Omer C. Stewart's Article

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In March 1963, anthropologist Omer Stewart delivered a paper at the second annual Tall Timbers Fire Ecology Conference in Tallahassee, Florida, about the ecological significance of the use of fire by aboriginal peoples around the world. This paper, published later that year in a conference proceedings, is being reprinted here because, 50 years hence, it has become clear that it represents a turning point in our understanding of intentional burning by indigenous people and its effects on vegetation. Few ecologists, foresters, or wildland managers in Stewart's day believed that indigenous burning deserved any consideration whatsoever, and we have Stewart's clear voice to thank for articulating the contrary view that largely prevails today.

I never had the privilege of meeting Omer Stewart; nevertheless, his published and unpublished work on indigenous people and their use of fire and his arguments for the importance of this topic to ecology and anthropology have greatly influenced me and many others in various disciplines. As one of the first American anthropologists to understand that indigenous burning was relevant and, indeed, essential to our current understanding of the historical ecology of particular sites in many vegetation types, he taught us that indigenous people, and even non-Indian "backwoodsmen or hill folk," had specialized local forms of knowledge that could make a significant contribution to regional fire histories.

Over the course of his career, Stewart gathered, from oral interviews and written records, a great deal of information on the topic of indigenous burning to manage vegetation from disparate indigenous cultures separated widely by geography on multiple continents. The apparent universality of indigenous burning led him to conclude (in this reprinted article) that "man with fire as a tool has been the deciding factor in determining the types of vegetation covering about a fourth of the globe." Coming at a time when the sciences of fire ecology and prescribed burning were in their infancy, this was a bold assertion indeed.

In the American West, Stewart worked with the Washoe, Pomo, Northern Paiute, Southern Paiute, and other tribes over several decades, conducting a deep inquiry into the nature of their lives and burning practices. In his unpublished Pomo Field Notes from 1935, Stewart recorded that many Indian consultants spoke of deliberately setting fires in California's coast ranges and valleys for such purposes as encouraging clovers, fostering wildflowers with edible bulbs and seeds, eliminating brush, enhancing grass, and driving game and grasshoppers. Stewart found native people to be gifted empirical observers and practitioners with long-term ties to the ecology of places; he also believed that oral histories had merit in revealing past burning practices.

Stewart defined the subject of indigenous burning—"the way aborigines have employed fire to change the face of the earth," as he put it—as his primary academic calling. Over the course of his life, however, he pursued this calling largely in isolation, both within and outside of his discipline. Stewart read widely in the biological sciences, including ecology and the fields of range management and forestry, placing his arguments regarding Indian burning within a broader context bridging different disciplines. This was done long before the academic climate changed to favor more interdisciplinary dialogues and studies. He urged anthropologists and ecologists alike to always consider "the human factor when calculating climate, soil, plant life and animal life which have interacted to produce any particular landscape at any given period."

Stewart was puzzled why others weren't more interested in what he believed to be a foundational aspect of human culture, and this puzzlement is evident when he discussed some of the reasons why the study of Indian burning had been hampered in both anthropological and ecological circles. Noting that few ecologists directly inquired into aboriginal activities and their possible influence upon landscapes, he criticized their dismissal of ancient knowledge as a source of ideas about ecology. He pointed out that indigenous knowledge spanned centuries or millennia—as opposed to the one- to five-year durations of most ecological investigations—and could reveal effective ways of combating destructive insects, weeds, and diseases, innovative uses of the native flora and fauna, and insights that might advance the fields of theoretical and applied ecology.

In this vein, Stewart questioned the epistemology of the modern, Western world—specifically that of science—and its role in fostering the supposition that Native Americans have nothing to teach us. He pointed out that behind our ignoring of Indians and their contributions are racial biases entangled with attitudes of cultural superiority that cast Indians as ignorant, superstitious, and innocent children of nature. Although much has changed in our society since Stewart wrote "Barriers to Understanding," these critiques are as pertinent as ever. Scientific epistemology still values quantitative data over qualitative research, a privileging that often results in the material of the latter being labeled as "folklore" or "anecdotes." And while the overt prejudices common in Stewart's day have largely disappeared from academic discourse, they have been replaced by other forms of dismissal: Indians have no formal education; they don't speak in a jargon understood by scientists; they are too acculturated in Western ways to provide reliable oral testimony; there is no way of knowing whether their practices were intended or unwitting.

Despite these modern "barriers to understanding**,"** indigenous burning is today broadly recognized as an important topic of study in the biological and social sciences and humanities. A large body of cross-cultural studies substantiates Stewart's view that indigenous cultures worldwide embraced burning as a management tool in wildlands and in agricultural settings and that this intentional use of fire had important ecological effects in diverse ecosystems.[1] During the past 25 years, findings based on oral interviews and examination of historical written records have been enriched and verified by efforts in other disciplines and the application of new methodologies for detecting human signatures in landscapes, such as charcoal analysis of soils, phytolith analysis, and pyro-dendrochronological study.

[1] For the Americas, for example, see *Cultivated Landscapes of Native Amazonia and the Andes* (William M. Denevan 2001), *Cultivated Landscapes of Native North America* (William E. Doolittle 2000), and *Cultivated Landscapes of Middle America on the Eve of Conquest* (Thomas M. Whitmore and B.L. Turner II 2001).

Stewart advocated looking at the full complexity of the interactions between indigenous people and the biota. Due in part to this recommended approach, there is today a general agreement (though certainly not a consensus) that gaining an understanding of the reasons *why* native people set fires is an important component of reconstructing indigenous burning regimes. These reasons are first and foremost tied to the plants, animals, and mushrooms important to native peoples' livelihoods—which puts the emerging field of ethnobiology at center stage. Beginning with the assumption that fires were rarely set without people being well attuned to cause and effect, ethnobiological analysis can be an important starting point for assessing the biological and ecological needs of each species and its relationship to fire.

Research questions and hypotheses are starting to be developed and a range of methodologies from diverse disciplines utilized to quantify past human environmental manipulations and harvesting strategies and their resulting ecological impacts. In this field of historical ecology, Stewart's work can rightly be considered seminal. Archaeologists are teaming up with paleoecologists, environmental historians, ethnobiologists, geographers, and tribes to conduct interdisciplinary studies to unravel the techniques of former indigenous land management, including burning, as well as their goals and effects (see, for example, *California Archaeology*, Volume 5, Number 2, December 2013). The Joint Fire Science Program of the federal government, which has traditionally given funding to fuel reduction projects and fire behavior modeling efforts, has a new topic area called "ethnoecology" specifically for these types of studies.

Omer Stewart's pioneering contribution was that he elevated indigenous interactions with nature, particularly burning, to the status of a factor that cannot be ignored when piecing together the story of the land's ecological history. Re-publishing his classic 1963 article here honors Stewart for this role and for his steadfast espousal of a view that led him to be dubbed a "fire maverick" by his contemporary, E.V. Komarek. I only wish he could be alive today to see the sea change that has occurred in research methods and studies and receive the recognition that he so well deserves.