Comments on Controlled Burning

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APPROXIMATELY 8 years have elapsed since the initiation of Tall Timbers and its Fire Ecology Conferences. During this period this organization and its conferences have affected ecological research, land management, and education as they relate to fire. Papers presented at this and past conferences have contributed to our understanding of fire and its interrelationships, but at the same time have indicated how little we actually know about this subject. I hope the facts, observations, experiences, and hypotheses accumulated thus far in the Tall Timbers Proceedings have not created a sense of completion or arrogant optimism, but rather a feeling of humility and an excitement to continue pursuing the ever-widening horizons in this field. Future search and study should not be hampered with bias or subjectivity, as it has sometimes in the past, but should be enveloped in honesty and sincerity, and continually revitalized with uninhibited originality. Investigators must strive to maintain a proper ecological perspective in a society that is apparently becoming more dollar oriented and insensitive to nature. It is time the first and most important consideration be what is best for the land, its natural resources, and our future, and not other considerations like costs-to-benefits ratios, margins of profit, or economic or engineering feasi-

bilities. Man must find his place in nature, for his present civilization will eventually falter if he continues to warp or break ecological laws with casual indifference.

An issue demanding immediate attention is the relationship between vegetation burning and air pollution. Many communities and individuals have been harrassed for decades by wanton, inconsiderate, perhaps unnecessary, and almost continuous smoke, ash, soot, and fumes created by the burning done in heavy industry, manufacturing, lumber and paper mills, refuge dumps, and even in backyard incinerators. All these practices have been criticized as the public became incensed and conscious of air pollution and its adverse effects. Some agencies, communities, counties, and even states are now becoming concerned over the additional nuisances occasionally created by agricultural and forest burning. A few groups have already placed a moratorium on all farm, forest, and brush burning. In some instances these same organizations have done little to curtail the air pollution of industry, but have very quickly and deliberately prohibited outdoor burning. Perhaps the public and its agencies were never really convinced that there were any merits to using fire as a land management tool, whereas certain benefits associated with industry tend to produce a reluctance to impose restrictions. It might be that some officials are also using this air-pollution approach to ban landscape burning because they are opposed to all burning, knowing intuitively that all fire is bad, and therefore, do not hesitate to use any means to obtain their ends. Wildland and farmland burning can undoubtedly create nuisances, and research is needed to determine when, where, and how to accomplish it without annoying the public. Objective research is needed equally well to ascertain if the rapid decomposition of vegetation by fire can really be classed as air pollution along with that produced by man's internal combustion engines and industry. Or is vegetation burning, whether deliberate and controlled, or wild and free as it has been since the earth's land masses supported terrestrial vegetation, a natural process that perhaps enters into the dynamics of balancing the globe's air, soil, and water composition, playing essential roles in processes like the oxygen, carbon dioxide, nitrogen, water, and photosynthesis cycles? If controlled burning of wildlands is stopped, only to later have the same areas consumed in

wildfires, how will this have lessened the so-called air pollution? I believe the answer is related in part to the fact that controlled burning is still unrecognized as one of the most effective and natural ways to reduce fuel buildups and wildfire occurrences in many areas. Correspondingly, agricultural burning is largely viewed by the public as a matter of convenience and expedience, forgetting that it might be the most ecologically efficient way to treat the land. Kern County, California highway department burned roadside rights-of-way to reduce weeds, vegetation height, and the fire hazard because it was efficient and economical. Now, some rights-of-way are being maintained with herbicide spraying which in my estimation creates noxious air pollution because of the drift-effect of the chemicals during application and the subsequent volatilization and unwholesome odors that often persist for weeks. The spraying does not reduce the fire hazard, is far more unsightly than burning, and may be actually messing up the roadside balance by promoting aggressive weed establishment. Additional and repetitive research on the effects of controlled burning on man-made and natural systems is needed, and ecologists must continue to emphasize that natural factors such as fire can seldom be eliminated or replaced without serious consequences to the ecosystem. In relationship to this, some land specialists are assuming that fire will have no place in the coming era of modern and intensive land management, even though it might have served as a tool in past wildland management, or was an important factor during Indian times. This is somewhat comparable to the recent efforts of a few Scandinavian researchers to eliminate *Fomes* spp. fungi from intensively managed forest plantations with non-specific fungicides, becoming so concerned with the detrimental effects of *Fomes* that they forgot the inherent, necessary, and beneficial effects of the other fungi which would also be destroyed.

The Tall Timbers Conferences have been effective in dissolving much fire prejudice, in creating harmony and understanding between investigators, the academic and practical disciplines, scientists and laymen, administration and management, and agencies. But now this education must be extended to the general public, not in the form of propaganda as sometimes in the past, or with hypnotic advertising, but by respecting the average citizen's intelligence, teaching him

sound and unchanging ecological principles which will equip him to understand, evaluate, and accept correct land and environmental uses that relate to his well-being.

Tall Timbers has made great strides in promoting the use of controlled fire as a management tool. In many instances controlled fire has been nothing more than a return of a natural part of the environment, bringing biomes and plant succession back into balance. Managers need to rekindle or develop a land stewardship so perfectly illustrated by the life work of Mr. Herb Stoddard. Good land management is still an art, requiring applied talent, dedication, sensitivity, responsibility, ambition, pride, and a genuine concern for the future; qualities that seem to be fading in our present society. Ties with the land are also being broken by specialization, tendencies to divorce work from pleasure and to measure happiness monetarily, and a depreciation of individual creativeness through loss of individual merit.

There are still vast frontiers to be settled in fire research, education, and management, despite what the Tall Timbers Fire Ecology Conferences have done thus far in promoting the understanding of fire and its relationships. In addition, we should always remember to keep fire within the framework of ecology in all aspects of our work, realizing that fire is only one of the many factors operating in unison in each ecosystem.