

Fire, Land and the People

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I am grateful that the course of life has led me over many snowshoe trails and firelines to, in a sense, climax here with the awesome task of summarizing this joint Intermountain Fire Research Council – Tall Timbers Research Station Symposium.

After 3 days of scientific dialogue on the phenomena of fire in the environment, it is obvious that this is no ordinary bear we have by the tail here this afternoon. It is instead a grizzly of Boone and Crockett distinction; big, ferocious at times, yet a staunch friend of all life when the ecosystems are ecologically ready to burn.

The speakers have unloaded a complex wad of fire and related information on us in a short time. If any of you are floundering in the smokey world of fire management you are not alone for I, too, can only partially sieze the impact of the meeting's thrust. Let us, then, each design our own summary, tailor it to his personal and agency objectives, then in addition carry the symposium's proceedings for ready reference in our packsacks because that document will be loaded with data needed by all who share responsibility for high-quality land management in the years ahead.

I wish I could in some way relate each paper, each speaker's expertise and each comment directly to fire management today and in the future. That, however, is impossible.

So I shall not summarize but instead share with you several implications that came to mind as I read abstracts of the papers and listened to the presentations during these past 3 days. These implications might serve as common denominators or focal points to assemble in more integrated form the mass of detail presented here. If we can do that, then the symposium's proceedings will be more useful to each of us.

But to make these implications meaningful, let me first define fire management as I think many of you generally accept it. There may be disagreement among us on what the concept is, but here's how I view it. Hank DeBruin disclosed the heart of fire management when he said:

"We are changing from *fire control* as a focal point to *land management* as a focal point."

John McGuire said in his talk at our banquet:

"Fire management cannot be separated from total forest management. Neither can it be separated from land use planning."

Fire management, then, is designing and conducting fire programs to support the objectives sought in land use plans. It follows that as land management objectives differ, fire management activities should be adjusted accordingly. Prevention, detection, presuppression, suppression, pre-attack planning, fuel management, smoke management, prescribed fires including lightning-caused and other incidental fires burning to prescription would be employed. In contrast to historic practices, fire is recognized as an ecological influence to be managed, not as an enemy to be vanquished at all times in all places. Fire management is the whole fire ball game beginning with fire as a part of land inventories, continuing in to fire prescriptions in land use plans and climaxing with expertly executed fire activities in the woods and on the range. It is in this context of fire management that I present the following implications for the future.

During the course of life for each of us certain critical events stand out that had much to do with our destiny; that is, our status in life, our careers, our successes and failures. As it is with individuals so it is with nations, organizations and activities like land management. Obviously, a most significant implication is that *this joint symposium is for fire and land management a critical event, a milepost on the trail leading mankind to more knowledgeable interaction with his earth's ecosystems.*

Dr. Komarek, Bill Fisher and all who participated in arranging this symposium deserve recognition for a tough task done professionally. They should go down in conservation history as men and women who gained widespread recognition for fire as a basic, inevitable part of the environment.

The fire management crusade is largely behind us, the complex task of implementation lies ahead. Let us, then, dwell little on convincing ourselves that fire is something more than public enemy number one and get on with the complex, professional task of managing fire in service to land management objectives. The panel chaired by Keith Thompson collectively said that land managers are not applying our current knowledge of fire ecology. Serious barriers were identified by them. Yet several participants explained innovative fire management in the National Parks. Dave Aldrich and Bob Mutch discussed how to do it on one end of the land management spectrum; that is in wilderness. Dave Devet spoke to the opposite extreme; fire in the intensely managed forests of the southeastern United States. The land and the people need much more of this kind of professional fire management plus appropriate approaches to situations between these two extremes. Ed Komarek must feel good that a big share of his energies can now be diverted from his persistent crusade to gain recognition for fire in the ecology to doing the fire job on the land. Thanks, Ed, for helping the fire and land management community cross a land management frontier.

Fire will have to be dealt with as a major ecological fundamental during the process of planning the use of forest and range lands regardless of ownership. Wherever fire is a factor . . . and that's nearly everywhere . . . land-objective-related fire prescriptions are needed to guide fire specialists in designing fire programs that serve the land, its resources and therefore the people. Without these, little foundation exists for fire management activities.

Detailed land use planning is underway in many areas and land use legislation looms as important national potential. That circumstance presents a nationwide problem in the management of fire on the landscapes. Though a few good fire prescriptions have been written for land management units, progress is spotty. Thus, I would like to see the Forest Service use its broad federal, state and private leadership role to lead the design and application so fire prescriptions become a part of all land use plans. Where appropriate these prescriptions should include acceptable substitutes for fire in the ecology as suggested by Rita Thompson.

Cost-benefit equations for all fire activities should be broadened

to include; costs, land output-related benefits, minimized energy consumption, good and bad environmental impacts and maximized people involvement.

I was glad to hear Dale Wade and Darold Ward present a positive approach to energy conservation because fire management, especially fire protection activities, are at best gluttonous gobblers of gas, oil and equipment. Future fire programs will have to be analyzed and adjusted to assure they do not consume more energy than they save or produce. Moreover, this analysis should be extended to assess potential impacts from suppression actions that might degrade the environment or otherwise reduce the ecosystem's capability to maintain balance, diversity and productivity. The implications of fire exclusion will have to be weighed just as scientifically as potential damage from fire. And there's much more to it than that.

These are times when people, especially young people, want and need involvement in worthy endeavours. Ironically, most governmental agencies, industrial organizations and similar employers of people seek to reduce personnel on their roles in favor of energy-consuming machines. Let us, then, give people involvement a plus factor during cost-benefit analyses of future fire management programs. It will help keep government from straying too far from the needs of the citizens.

To manage fire in support of land use plans, we'll have to integrate and use all available fire and related knowledge. Our symposium has demonstrated that experts in many disciplines are needed. As the fate of each molecule in the ecosystem affects all others, integration not isolated specialization must become the primary concern of those who manage fire. Some past practices considered worthy from a fire control standpoint will emerge as barriers to ecosystem health when viewed in an integrated way. Numerous participants in the symposium have presented papers loaded with scientific, fire-related data. To apply this and similar information successfully in fire programs will require close on-the-job ties between research scientists in several disciplines, land managers, fire specialists and the citizens. I have high hopes that the Fire Management Research, Development and Application Project led by Dr. Jim Lotan will help a great deal

to integrate knowledge that fire may better serve the land and the people.

Fire management requires knowledge development into subject areas barely touched by past research and development endeavours. Already I have emphasized that research scientists, administrators and operational fire specialists have to team up and apply all pertinent fire-related knowledge known today. That'll take a heap of doing. It is encouraging, too, that research is underway in many areas of critical needs, some of it presented during our symposium. Much more is needed in order to scientifically manage fire in support of land objectives.

Given work like Dr. Nellie Stark's nutrient cycling relationships associated with burning, land managers can better achieve professionalism in fuel management. Think of the implications of continued research like Dr. Parmeter's work on the effects of smoke on pathogens and other fungi, and overviews like Dr. Habeck's work in the Selway Bitterroot which presents invaluable data to support quality wilderness fire management. Reflect for a moment on the effect today's wood utilization, much less tomorrow's, has on the data presented by the Miller Creek-Newman Ridge panel. The whole area of fire effects in both forest and grasslands, including the results of fire exclusion, has long suffered from inattention but research momentum is growing in this ecosystem-based, multi-disciplinary effort. That's good. For how could one manage fire to support land objectives unless he can specify the effects of alternative fire plans? Beyond that, reliable equipment will have to be developed to help apply the new research findings.

Knowledge shortcomings among those who manage fire will have to be strengthened by improved continuing education, undergraduate and graduate studies in fire. It is obvious that fire management can only be achieved in accord with capabilities of the people doing the job. Consequently, information such as presented in this symposium, outputs of the Fire Management RD&A and other multi-functional knowledge should be used to strengthen fire management curriculums in appropriate universities and in-house training among the agencies. That way, tomorrow's land managers and specialists

will have in-depth grasp of fire knowledge and personnel in those jobs today will have a means to strengthen their capability in fire. Federal land managing agencies, the states and the universities should work together in upgrading educational opportunities in fire management.

An example of knowledge requirements comes to mind that is pertinent to developing fire managers. At the request of a forest supervisor who was reorganizing his staff, about 4 years ago, I wrote a description of duties for a fire specialist who would serve a national forest. I cranked in fire control activities, fire planning, specialized contributions to multi-disciplinary teams, fire portions of land unit prescriptions, fuel management, smoke management, fire behavior, fire in the ecology and computer analysis. After scanning my paper briefly, the old supervisor put it aside and said:

“That’s the job alright, but you’ve described the guy who walks on water.”

Fire specialists for the future can’t be expected to walk on water but they’ll have to think ecologically in smoke. Despite the many fine and needed computer-based programs presented during the symposium, let us not forget that there is no substitute in fire management for the capable specialist intimately familiar with his chunk of earth and master of the state of the art in fire.

Let me clarify one further point regarding qualifications of fire management personnel. Throughout this paper I refer to professionalism and professionals in fire. Please do not confuse this with the Federal Civil Service’s division of personnel into two primary groups; professionals and technicians. When emphasizing a professional approach to fire, I’m talking about people like: ranger district fire control officers; forest rangers; park rangers; regional, forest and state staffs; forest supervisors and similar line officers; that is, all who carry the packsack of fire and land management responsibility.

Fire specialists, both operational and research, have before them a tremendous challenge to implement the Fire Management commitment of line managers. Only the most insensitive fire specialist could listen to presentations by Hank DeBruin, Orville Daniels, John McGuire, Bruce Kilgore and several other line officers without realizing that fire control is already expanded to Fire Management

and the job of the fire specialists is to put it to work on the land. During a similar symposium held in Missoula 4 years ago we talked about how we should broaden historical fire control activities to fire management. Policy and program-wise that direction is now achieved in most federal agencies who deal with fire. Already over 3 million acres of wilderness and similar lands are managed to restore fire in natural ecosystems. Top leadership has said:

“Get on with it.”

Now, it is up to us to manage fire in service to the land and the people.

But to manage fire we have to also maintain strong fire control capability. In presenting his paper, Sandy said:

“The role of fire protection is to protect resources, property and human life.”

Fire Management, we know, includes far more than that. But it is the availability of this fire protection strength that allows us to manage fire with assurance that we can constrain its flames as needed. Fire control forces are at once an aid and a constraint for we cannot extend fire on the landscape beyond its capability to act. To meet their responsibilities in this era of fire management, these forces need a broadened charter. Someday soon, I hope Sandy can add this phrase to his definition of the fire protection role:

“and to contain fires within prescriptions scientifically prepared to enhance the objectives sought for the land.”

Federal, state and private land management agencies and research and educational institutions should progress towards Fire Management together.

History has shown that significant progress in fire activities has been rarely achieved by a single agency or professional group. Like the total mobility Hank DeBruin talked about, the heart of today's fire program is inter-agency and inter-state cooperation. It will take the combined energies, knowledge and experience of all of us to achieve high quality results in fire management.

New state and federal legislation will be needed before some aspects of fire management can be implemented.

With minor exceptions, ample authority is available in the federal agencies to implement fire management. The greatest obstacles to

progress center in attitudes, priorities, knowledge shortcomings and finances. However, John Crumb and Dick Sandman pointed out legal constraints in their respective states that would curtail some aspects of fire management on state and private lands. But much progress can be made in both the state and federal establishments under existing laws. As public understanding for the new concepts develop, needed new laws can be enacted. Similarly, as new research unfolds new laws, regulations and operational practices may be needed to coordinate the beneficial aspects of smoke with the need to protect air quality.

Line officers and fire specialists will have to stand accountable for responsible fire management. In summarizing our fire conference here in Missoula 4 years ago, Regional Forester Connaughton all but shut the door on fire management, as I have defined it, when he concluded that we could tolerate no mistakes that would loose fire on the landscape. Ed Heilman's panel has further pointed out, that there is no room in the program for amateurish performance. Competence is mandatory. Moreover, the record of Forest Service Region One and elsewhere is not complimentary when it comes to holding fires within prescribed limits. It is ironical that most escapes are caused not by lack of knowledge but from poor application of widely known and proven practices.

But to say we shall never fail is like telling a doctor to go practice medicine but never lose a patient. Even if a patient crosses the big saddle now and then the doctor has performed no malpractice so long as he adheres diligently to his professional code. As it is in medicine so it is in fire management. We know that to continue all out fire control in all places would be as much malpractice as allowing fire to roam without expertly applied scientific prescriptions and control plans. A thorough, visible, professional rationale must underlie each major fire management plan and responsible managers must stand accountable for the results. If the rationale is sound, the prescription scientific, the implementation thorough then errors will be minimal and an occasional error, or lost patient, acceptable. But I must reemphasize and support the panel's conclusion that "There is no room for less than fully competent performance in fire management as it is viewed today." Strong accountability must be part of the

program both to require the use of fire in the ecosystems as needed and to control fires to prevent intolerable damage.

Conflicts between the need for fire in the environment and air quality programs will have to be resolved. The symposium established clearly that fire is necessary under many management strategies in order to maintain total ecosystem health and productivity, that these land units may contribute maximum benefits to mankind. This direction, however, seems at first view to conflict sharply with state and federal programs to maintain clean air. The panel moderated by Walt Fillmore spoke to the question;

“Is prescribed burning compatible with environmental quality?” And their discussion clearly surfaced the conflict. Since nothing was resolved by the panel, the land managing agencies and air quality experts will have to join in finding ways to maintain healthy, productive land units with minimum impact on quality of the airsheds. That task is further complicated by Dr. Parmeter’s research which suggests substantial benefits derived from wood smoke in the air. By working positively together this fire-in-the-ecosystem vs. smoke-in-the-air conflict can be resolved. Bright rays of light gleam through the smoke. For example, pressure from the air quality authorities has already and will continue to help force improved wood utilization during timber harvesting. Effective smoke management and control programs have been developed jointly and are in operation. And there is opportunity for further evaluation of ecologically sound alternatives to fire in some but not all ecosystems.

The foregoing, then, are the implications that stood out for me during the past 3 days.

Our evolvment from Fire Control to Fire Management is not a pendulum swing too far right that will someday drift back to some preconceived center. Nor is it the death of Smokey Bear. Fire Management is the rebirth of professionalism with opportunity to help fire serve the land and therefore serve man and all the rest of the kingdom of life. It is directly associated with the growing conviction across America that understanding and respect for the earth’s ecosystems is mandatory in order to assure a sustained bounty from the land.

Dr. George Howe identified the central problem in implementing

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fire management when he said in his paper's abstract:

"For at least 10,000 years fire has been second only to climate as an influence on the evolution of northern Rocky Mountain plant species . . . the evolutionary role of wildfire is not widely appreciated."

Fire, then, is a powerful ecological factor, inevitable on many landscapes, yet less predictable in its consequences than its companion elements of the environment's foundation; soil, air, climate, water and land forms. Fire's complexity is demonstrated by the diversity of participation at this meeting where unit managers, ecologists, geneticists, foresters, historians, biologists, systems analysts, lawyers, editors, geographers, wilderness specialists, civic leaders, planners, pathologists, wildlife specialists, hydrologists, silviculturists, engineers, soil scientists and others have joined in dialogue to define the status of fire knowledge and chart direction for the future. Because so many experts in ecosystem functioning participated, we have generated more land management-related direction than those smoke, flame and shovel fire meetings of the recent past.

Before closing, I want you to know, too, that my wife, Janet and I have enjoyed the association with you all at this meeting. Ed Komarek said that fire is truly an important phenomena of creation. And to join, however briefly, with people interested in fire and the land is indeed a creative experience. I know that to be true also.

So from the standpoint of land health it is a new day. And for those fortunate people who deal with fire on the landscape it is a good day filled with professional challenge and promise of more diverse productivity from the land in both short and long term.