

Education and Training -- Research and Development: Report of Futuring Group 1¹

Public agencies involved in natural resource management and fire protection will face many challenges over the next few decades, including decreasing real budgets, lower staffing levels, increasing responsibilities, expanding technologies and a more sophisticated and demanding public. In addressing these challenges, resource managers must be prepared to enter a new phase of interagency cooperation in which authority and responsibilities are pooled for more efficient utilization. Closer liaison must also be established with higher education to insure both the development of needed technologies and the production of a skilled employment pool.

TRENDS

The trends identified by the group were either factors internal to fire management (intra-agency management and policies) or external factors (public needs, demands, and expectations). Although all participants expressed similar concerns, it was evident that federal agencies, particularly the Forest Service U.S. Department of Agriculture, were under the greatest internal and external pressures.

Funding

Intra-agency trends are more directly related to reduced funding and decreased staffing. At the same time, existing staffs are becoming fragmented through increased field specialization, often resulting in poor communication and conflicting goals. The trend toward budgeting austerity is also effectively reducing salaries, making natural resource management careers less appealing.

Education

Public expectations of land management and fire prevention agencies are increasing and will continue to do so. These expectations are not only the result of the increasing--and increasingly diverse--uses of public lands, but also of greater public sophistication on environmental issues. Public agencies are therefore expected to provide more with less, yet do it better, than ever before. As a result there is an increasing need for agencies to educate the public, not only as to their management activities, but their underlying rationale as well.

The need for multidisciplinary "generalists" is becoming more important. This trend is the result of two separate processes. First, the previously mentioned trend towards staff specialization has reduced the potential for cross communication, even within the same agency. While specialization seems inevitable, there is an increasing need for individuals with academic training in multiple fields to bridge this communication gap. Secondly, in the face of reduced staffing levels, the need for specialists able to perform other tasks is becoming critical.

Training

The inconsistency in training of personnel for prescribed fire management is a developing problem. Diverse local, state, and federal agencies are creating highly individualized training programs with little consistency in the scope of subjects or detail. At best this results in difficulty for land use agencies seeking to cooperate fully on prescribed burn programs of other agencies.

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A model of coordinated training for prescribed fire managers can be found in the federal "S" series of courses for fire suppression. However, this training, offered as

individual classes with no overall coordination, increasingly drains available staff time and (travel) resources. Individuals required to take more than a single "S" course may wait months between classes, and may have to travel widely from course to course.

Research and Development

The technological and theoretical advances in resource management expand the options available to manager confronting real problems. As these (often expensive) tools are developed there typically is a corresponding demand to use them in management programs. Conversely, the commercial, residential and recreational development of America's wildlands act to limit the options available to resource managers to those suitable for use in and around the public. Also, resource programs become much more expensive and labor intensive under these conditions. The need exists for the development of new-management techniques designed for efficient use within the urban/wildland interface.

Past research into fire behavior and suppression techniques has proven invaluable at increasing the ability of public agencies to attack fires efficiently and effectively, yet the opportunity to continue this research in the future appears to be decreasing. This downward trend in fire behavior research is a serious problem, particularly in the face of increased fire starts, wildland urbanization and decreasing staff levels for suppression activities.

Key trends are these:

- Decreasing number of young people educated in natural resources entering the work force.
- Increasing responsibilities in time of decreasing available money.
- Increasing need for people trained in multiple disciplines.
- Increasing public scrutiny, resulting in increased emphasis being placed on public education (by management).
- Increasing public expectation of resource agencies.

- Increasing public awareness regarding the environment.
- Lack of perception by the public of the high cost of resource management.
- Increasing use of prescribed burning for fuels management.
- Increasing urbanization of wildland, resulting in a decrease in management options.
- Decreasing emphasis on fire research.
- Increasing fire occurrence.
- Decreasing budget allocations for fire protection, including prevention, suppression and training.

VISIONS AND STRATEGIES

While the visions all differ, one common thread is found in their respective strategies: the need for legislative support. The development of new policies for the management of public lands, and the necessary funding and staff support to implement them require obvious legislative action. More profoundly, the members of the group expressed a sense that government decision makers are either unaware of, or unresponsive to, the needs of resource managers and fire suppression personnel. Moreover, the administrators of public resource agencies seem unwilling to argue in favor of these needs during the budgetary process.

Research

Vision

Fire research would be supported at all levels, and would produce what users need.

Strategies

- Establish a National Director as resource coordinator, with interagency involvement.
- Identify user needs and issues.
- Develop legislative support.
- Increase communication between users and researchers.

Discussion

This vision not only reflects concern over the reduction of the Forest Service fire research program, but also over the tendency in academia to concentrate on research that does not meet the immediate and pressing needs of fire suppression personnel. A key aspect of the vision is that no one agency is singled out as being solely responsible for fire research. Instead, the call is made for a coordinated effort involving all levels of government (local, regional, state and federal) and higher education.

Training

Vision

A standardized prescribed fire curriculum and qualification/certification system would be developed and adopted by all resource management and fire agencies.

Strategies

- Assign one full time person from each agency as a fire management training specialist to develop curriculum.
- Cooperate with academic institutions.
- Increase communication, cooperation and coordination between all agencies. including state and local.

Discussion

Currently, each agency using prescribed fire as a management tool has developed its own training program. These programs vary widely in content and scope, with a resulting concern between agencies about the qualifications of each other's fire managers. Also, prescribed burning is entering the area of being a true profession, and practitioners feel the need to formally define it as such.

Vision

Fire management training would meet proficiency standards in a timely and cost efficient manner.

Strategies

- o Secure interagency commitment to improve training.
- o Establish fire academes to provide quick cost efficient methods to train fire management personnel to desired levels.

Discussion

This vision reflects the concern of the group that fire training places a significant burden upon management due to the lack of sequentially arranged courses offered at a central facility. In some cases, it may take 2 years to train personnel to desired levels, often by courses at widely separated facilities.

Education

Vision

Policy makers, resource protection agencies, and the public cooperate so that potential for loss of life from wildfire does not exist at the urban/wildland boundary.

Strategies

- Educate the public concerning resource management problems/solutions.
- Channel public awareness toward legislative action.
- Encourage enforceable land use planning and building codes.

Discussion

Central to this vision is the concept that--through thoughtful land use planning, construction codes, and public education--the potential for loss of life due to wildland fire need not exist. The current threat to private citizens living near the wildland/urban interface is largely the result of poorly considered development and weak zoning regulations.

Prevention

Vision

There would be a fire prevention program based on economic benefits, rather than traditional "Smokey-the-Bear" arguments.

Strategies

- Encourage fire prevention research.
- Establish a means of inter-agency support for:
 - public education
 - enforcement
 - information
 - engineering
- Develop legislative support.

Discussion

While the "Smokey-the-Bear" fire prevention campaign has been undeniably effective at heightening public awareness on the danger of wildfires, the public remains largely unaware of the high economic cost of wildland fires, in terms of suppression costs and long-term resource loss. The group agreed that such awareness is essential to justify the need to increase budget allocations for fire research, fire prevention efforts, and modern suppression. Furthermore, awareness would also support the need for more effective land use planning and construction techniques called for in the prevention vision.

Staffing

Vision

Public agencies would be staffed with highly skilled professionals, who would form a balanced distribution of ages, ethnic backgrounds and gender.

Strategies

- Agencies work with universities to establish career ladders for resource professionals.
- Develop attractive salary scales.
- Focus recruitment at pre-university levels.
- Attain agency commitment to realistic staffing to meet agency mandates.

Discussion

The group expressed a strong concern over the future availability of qualified staff. Agencies need to place more emphasis on orienting young people toward careers in resource management, particularly among communities that have been traditionally underrepresented in this field.

The strategies for this vision also highlight the problems placed upon career planning and recruitment by traditional low salaries and fluctuating staff levels. The natural resource field must compete against higher paying professions as students plan their academic career. Furthermore, the vagaries of employment opportunities in the field, created by staff reductions and redistributions, makes a career with resource agencies an uncertain prospect for young people today.