7. Fire Education

Fire Education
This chapter presents the core NWCG wildland fire messages as well as communication techniques that are specific to this important topic. Also included are concepts of risk communication. Overall communication planning processes, tactics, and materials development are included in other chapters.

Consult the APPENDIX for this chapter for a number of related resources.

Wildland Fire - A Tool for Stewardship

Wildland fire communicators are charged with helping a variety of audiences understand the role of wildland fire. With a society that has been taught that all fire is bad and that suppression is our only option, the communicator's task is not an easy one.

Your message must range from basic resource management to very detailed fire ecology concepts. Message complexity must match the objective(s) of the intended message, the audience, and the setting, both physical and institutional.

The message begins with both unplanned wildland fire and prescribed fire as background. *Wildland fire* is either suppressed or permitted to burn under a predetermined management plan. *Prescribed fire* is the deliberate ignition of wildland fire to achieve established resource management objectives. Prescribed fire and the use of natural occurring fire as tools of management (i.e., stewardship) are the more complex messages. Helping your audience understand the concept of prescription (planned) fire is central to sound management.

Fire Management

These prescriptions are objective oriented — the establishment/maintenance of healthy forests and grasslands (e.g. fuel load reduction, regeneration of select plant species that are fire dependent) or the enhancement of certain wildlife habitat. Most often though, returning fire to a fire dependent natural community accomplishes multiple objectives. Collectively the outcomes are overall natural community health and maintenance of natural fuel loading — both key themes or storylines for your messages.

Prescribed fire is a well-established practice on public and private lands throughout the world, and is based on years of scientific research. Resource managers are diligent, and must be portrayed as such, in the planning of prescribed fire. Each plan is targeted for specific outcomes with the utmost care taken to protect human life and property, manage impacts of smoke, protect historical and archeological resources, and protect the ecological integrity of the physical and biological resources.

By carefully calculating meteorological factors, fuels, slope of land, and other relevant conditions, resource managers can control and direct their fires. Their charge is to ignite, hold, monitor, and extinguish their prescribed fires. The extensive bodies of knowledge of wildland fire science and wildland fire ecology provide excellent standards of practice for those charged with this stewardship. The science behind the flames also underpins your message. Because the American public highly values and supports science, the crafting of wildland fire in the context of science increases the chances of message acceptance and impact.

Fire tragedies and extensive fires as seen in Florida, Mexico, and elsewhere in 1998 brought the issues to the forefront of national and international news. Likewise, prescribed fires that have escaped control lines and turned into a destructive wildfire have made headlines. All too often the news reports are restricted to tight time slots and sound bites. However, there are windows of opportunity for opening in-depth dialogues with your audiences about the need to reduce hazardous fuel accumulations and restore certain fire-dependent ecological processes. Audiences need to understand that an immediate need exists in many places around the world to reduce fuel load to prevent extreme fires and to both restore and maintain the health of fire dependent ecosystems. The reduction or treatments include manual, mechanical, biological, and chemical methods in

addition to fire. While most prescribed burns are relatively small, the plan for periodic burning must be made and presented to the public as strategic landscape-scale plans to restore health and vigor to vast regions. Often this is the primary reason for prescribed fire.

To do this requires addressing the following:

- Excess of naturally occurring fuels and fuel accumulation as a result of land use/land settlement patterns
- Historical fire suppression
- Fire-dependent ecological processes

Messages must convey that wildland fire is very much a societal problem, and that both human interventions and human acceptance of naturally occurring fire are often the best solution, but they are not universal solutions.

Public support is not only required for the concept of wildland fire management but also for institutional support. While this is not a dominant message, audiences need to understand that stewardship of the land, including wildland fire management, requires resources. In situations where organizations are downsized, budgets are reduced, and caps are placed on numbers of seasonal employees, these organizations are stressed to meet the competing demands for immediate suppression, long-term needs for fuel load reductions, and other fire-related stewardship activities. Education can create an awareness of agency needs.

Wildland fire management effectiveness is dependent on institutional support and cooperation as well as public understanding and support. Sound fire management science and an extensive understanding of fire ecology exist. Thus your role includes inter- and intra-agency communication and leadership. If support from within is not evident, public opinion, and in turn public support, may wane.

Overshadowing all of this is the risk factor — the risk that a prescribed fire will escape. While land management agencies find the issues of an unplanned fire moving from public lands to private lands controversial enough, an escaped prescribed fire is a public relations challenge as well as a real potential threat to life and property.

Unfortunately the impacts and public perception of escaped prescribed fire either from poor planning or from uncontrolled events are the same. Thus internal communications and training must prepare managers for the risk associated with prescribed fire.

The same can be said for wildland fire use. More and more fire organizations are allowing wildland fire use and other modified suppression techniques to be used. Explaining the why and how and when of these actions is an important step in the public and management acceptance process. Sometimes not putting the fire out immediately is the appropriate thing to do.

Fire Education Messages

Wildland fire management agencies and organizations share common goals: to enhance personal safety and reduce loss of life while preserving and enhancing the health of forests, rangelands, prairies, and wetlands. Though communication of fire issues is extensive throughout the wildland fire community, our messages have not been consistent. For the public to truly understand the role of wildland fire, we must communicate clearly and consistently across all agencies.

To that end, the NWCG has approved the following *key messages* to communicate the following important elements of our efforts:

- The role of wildland fire in ecosystems.
- The actions that land management agencies are taking to reduce risks and realize benefits of wildland fire.
- The need for partnerships among agencies, tribes, residents, and communities to understand and prepare for wildland fire.

This section is designed as a guide for all those involved in wildland fire management. We hope it will help you communicate with key audiences about wildland fire. *This is not a script.* Users are encouraged to incorporate these concepts into their communication in their own words, making the information relevant to their specific situations.

Key Messages

1. Wildland fire is an essential, natural process.

2. Society's influence has altered historic fire cycles, leading to a dangerous and difficult build-up of vegetation in our wildlands.

3. Land management agencies are committed to a balanced fire program that will reduce risks and realize benefits of fire.

4. Improving the health of the land and reducing risks to communities requires partnerships among federal and state agencies, tribal governments, fire departments, communities, and landowners.

5. Public education is necessary to the success of fire management programs.

Key Messages with Supporting Points

1. **Wildland fire is an essential, natural process.**

   A. Fire has helped shape our wildlands for thousands of years, and is important for the survival of many plants and animals.
      i. Fire reduces accumulation of vegetation that can inhibit plant growth.
      ii. Some plants and animals depend on fire for survival. Periodic fire stimulates growth, reproduction of plants, and provides wildlife habitat.

   Use local or regional examples

The rare Karner blue butterfly larvae feed exclusively on wild lupine, a plant dependent on fire for its survival.

B. Fire behaves differently throughout the country.

- **i.** In addition to fuels (vegetation), fire behavior is affected by weather and terrain.
- **ii.** Virtually all vegetation types in the United States can experience wildland fire.

Use local or regional examples

2. Society's influence has altered historic fire cycles, leading to a dangerous and difficult build-up of vegetation in our wildlands.

A. Social and cultural approaches to wildland fire over the past century have focused on preventing and suppressing all wildland fire. We continue to learn and now have a more complete understanding of the essential role fire plays in our environment.

B. When paired with the right terrain and weather conditions, dense build-up of vegetation leads to fires that burn hotter, last longer, and spread faster. As a result, these fires become difficult to manage and can threaten areas of residential development.

- **i.** In addition, excess vegetation and lack of fire in some areas is threatening plant and animal life.

Use local or regional examples

3. Land management agencies are committed to a balanced fire program that will reduce risks and realize benefits of fire.

A. ***Safety*** **of firefighters and the public is the No. 1 priority** of land management agencies.

B. Land management agencies' **fire management programs** are customized for specific wildland areas to restore the land to more natural conditions, maintain already healthy ecosystems, and protect neighboring communities.

- **i.** Fire management programs are designed based on a **balance of needs** including **fire suppression, prevention, and fire use**. There will always be a need for prevention and suppression to protect people and communities.

C. Fire is a management tool used to accomplish specific objectives in a plan such as removal of excess vegetation or stimulating plant growth and regeneration.

- **i. Naturally occurring fires** (lightning, etc.) are either suppressed or allowed to burn in a closely monitored and confined area, based on the fire plan for the area.
- **ii.** Sometimes it may be necessary and/or beneficial for land managers to start fires in a closely monitored and confined area. These fires are referred to as **"prescribed fires."**
- **iii.** A fire program also may include **non-fire treatments** to prepare the land before natural or prescribed fire can be applied safely and effectively.

Use local or regional examples

D. Fire use is a managed process with comprehensive guidelines that prioritize safety and direct the planning and operations of the activity.

4. **Improving health of the land and reducing risks to communities requires partnerships among federal and state agencies, tribal governments, fire departments, communities, and landowners.**

   A. Fire burns where conditions are right. Fire does not acknowledge jurisdictional boundaries of federal, state, and local agencies; tribes; or private landowners.

   B. Agencies, tribes, and communities are working together to understand and accept what it means to live in a fire-prone area and to realize the benefits of managing fire in the wildlands.
      - **i.** Agencies and tribes are managing public and tribal lands through overarching fire management plans and programs.
      - **ii.** Agencies and tribes also are working to educate local governments and property owners of ways to make their land and property more defensible against wildfire.

   Use local or regional examples

   C. People who live and recreate in fire-prone lands assume a certain level of risk and responsibility due to the condition of the surrounding environment.
      - **i.** People **can** live compatibly with fire, if actions are taken to be aware of – and prepared for – local fire conditions.
         1. Contact your local, state, or federal agencies, or tribal fire management organization to determine your community's fire conditions and discover tips to reduce your community's fire vulnerability – before a fire starts.
         2. The more populated and closer a community is to fire prone areas, the greater the need for proactive fire management.
      - **ii.** Smoke from prescribed fire is a sign that steps are being taken to reduce risks and realize benefits of fire. The more land management agencies can plan and manage fire the more they can reduce smoke impacts.

5. **Public education is necessary to the success of fire management programs.**

   A. Fire is an important issue for the public, and public understanding is key to our ability to effectively manage wildland fire.
      - **i.** For many years, people have learned to fear and avoid fires of all kinds in wildland areas – whether they are natural or started by people.
      - **ii.** Individuals act based on their *perceptions*. Understanding the role of fire will help landowners and land users appreciate and support the efforts of federal, state, local, and tribal fire management organizations.
         1. Every year, millions of people visit and use wildland areas across this country. People are fascinated with fire, and we have the opportunity to introduce them to its benefits/role.

      Demonstration areas provide an opportunity to showcase the role of wildland fire.

      - **iii.** We need to motivate landowners and land users to mitigate fire hazards on private property, use recreational fire safely, and support fire management efforts so land management agencies, tribes, and firefighters can focus on public lands. This will ultimately reduce loss of life, property, and natural resources.

We need to communicate with our neighbors about the role of wildland fire in a consistent, simple, and memorable way.

iv. We need to demonstrate the importance of fire management to the public, agencies, and tribes by continually showing support for these practices.

1. We must educate within our own agencies to ensure that staff understand and support fire management and public education efforts.

v. We need to be clear in our communications about both the benefits and risks of wildland fire.

Use local or regional examples, such as acknowledging that there is risk of a health impact with smoke, but the benefits of fire management are greater than the risks. These examples should recognize that smoke always poses a risk to people with severe respiratory problems.

vi. Often people's perception of fire is shaped by the media's representation of fire. We need to be sure the media understand the role of fire and assist them by providing more comprehensive information about fire and the management issues facing federal, state, tribal, and local fire management organizations

Risk and Conflict Communication

Interpreting wildland fire ecology begins with a solid understanding of science and how it works, but it often intersects with public policy, economics, environmental aesthetics, and human values. Encouraging public understanding of wildland fire ecology concepts and implications in both environmental and social domains is no easy task. Balancing science, policy, and human values fairly and accurately, as a communicator requires solid understanding of not only the content but the manner of presentation.

Issues that pertain to environmental and health concerns can be controversial in the eyes of the public, particularly when sensitive values are at stake. The science and policies of wildland fire ecology often pose many difficulties when communicators must inform the public about fire, its effects, and its uses. Techniques for effectively handling sensitive environmental and health issues have emerged as the special communication genre known as risk communication. The concept of risk communication not only addresses quantifiable risk, but also the public's perception of that risk, which may or may not be in sync with the "real" risk (Sandman, 1993; West et al., 1995). For ecological communicators, risk communication is often a matter of interpreting complex scientific issues, and communicating to the public about their potential impacts. The real difficulty in science and risk communication tends to be a lack of common understanding among the lay-public of how science and technology function (Sandman, 1993; West et al., 1995).

Uncertainty in scientific research is intrinsic and generally understood by professional scientists in terms of statistical probabilities, measurement limitations, computer modeling simplifications, etc. Debate over facts, figures, and predictions within the scientific community is not only common but a critical part of the knowledge construction process (Bazerman, 1988; Gross, 1990; Myers, 1990). However, this aspect of the scientific process is not well-known nor understood by the lay-public. Scientists are often expected to quickly and accurately produce definitive answers and solutions. To accept that differences of opinion and uncertainty are inherent within the scientific community is not very palatable, especially when a person may trust his or her health, wealth, and environmental appreciation to the "expert" advice of scientists. Thus, if information appears incomplete or uncertain, the public tends to mistrust it, as well as its source.

As an ecological communicator, you must bridge this gap between the scientific and nonscientific communities and provide a common ground for understanding and trust. The goal of the communicator is to make meaning as clear as possible to foster a more accurate understanding of a risk, and thus more appropriate behaviors regarding that risk.

Ideally, you would like to convince an audience that the information being presented is the most accurate representation of the "truth available." The structure of the language itself can dramatically affect the way the message is received.

Recognizing and dispelling audience-held misconceptions about an issue requires the communicator to know the characteristics of your audience well, to construct the message appropriately for your audience, and to project a proper tone. This is not an easy task, to which many communicators would attest. The misconception should be presented clearly and respectfully, followed by the "new" concept, and why it is more accurate. Explaining why the misconception should be replaced by new information helps reinforce the point and persuade the audience to adopt the new perspective. Fields such as wildland fire ecology often must deal with clashes between science and public perception. Knowing how and why these clashes occur, and how to address them will prove useful in influencing public awareness and decision making.

When you are communicating wildland fire messages and are engaged in sustainable community planning, you are in great part using risk communications. Central to public understanding is conveying risk management options. While prescribed fire is one of the higher risk land management activities, negative impacts have been minimal on a national scale. At the heart of risk management and communications are effective planning, highly trained professionals, and effective policies to reduce risk. These are the tenets found within wildland fire management guidelines.

In the face of these risks, the American public appears to be showing a shift in attitude towards the use of fire as a tool of stewardship. While we have only begun to impact ecosystem health by returning fire to fire-dependent ecosystems, so have we only begun to impact public opinion. A concerted effort is needed on both fronts.

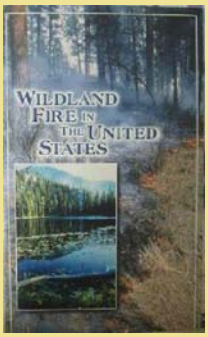
Considerations for Wildland Fire Communication and Education

For many people, fire remains a fearsome, destructive force that can and should be controlled at all costs. A comprehensive message is needed that clearly conveys the desired balance of avoiding fires with adverse affects while simultaneously increasing ecologically beneficial fire.

The ecological and societal risks of using and excluding fire have not been adequately clarified and quantified to allow open and thorough discussions among managers and the public. Few understand that integrating fire into land management is not a one time, immediate fix but a continual, long-term process. It is not an end in itself but a means to a healthier end. Full agency commitment to internal and external information and education regarding fire and other ecological processes is needed. Adaptive and innovative fire and land management is severely limited when agency employees and the public misunderstand or remain skeptical about the role of fire.

The task before us — appropriate fire management — is both urgent and enormous. Conditions on millions of acres of wildlands increase the probability of large, intense fires beyond any scale yet witnessed. These severe fires will in turn increase the risk to humans, to property, and to the land upon which our social and economic well-being is so intimately intertwined.

The NWCG brochure *Wildland Fire in the United States* is a good tool for illustrating the risks and benefits of wildland fire, and includes a map of the major ecosystems in the U.S. Available at www.symbols.gov.



Communication and education programs integrated into wildland fire management are critical tools to aid in building a nation of ecologically literate people, including leadership at all levels that understands and supports wildland fire management practices. While few users of this Guide will have responsibility for national campaigns, most of us can influence wildland fire communication and education at the local or regional landscape level. Out of these programs comes impetus for more national efforts.

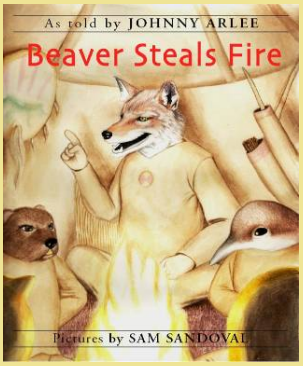
Wildland Fire Education Considerations

Wildland fire communication has multiple dimensions that must be considered in the early stages of planning. Most notably are:

- Wildland fire is a complex topic. It covers the breadth of subject matter — chemistry, physics, geology, meteorology, ecology, management, economics, ethics, education, law, etc. Simply reducing it to a fixed argument of the “science of” will not serve the communicator well.

- Wildland fire has numerous technical dimensions. Not only are we faced with communicating the science of wildland fire, we must also convey the idea that fire is not totally predictable or controllable. Each fire burns differently and as meteorological factors change, the nature of the fire changes. Thus, trying to help audiences understand wildland fire from a "static model" perspective should be avoided.
- Wildland fire, as it moves, involves a changing situation. Fire itself changes its own environment, e.g., winds. In essence, in managing a fire the professionals are mixing a recipe in which the ingredients are known but the quantities going in and out of the recipe are constantly changing as is the heat. Such analogies may help your audience better understand why wildland fire management is a demanding art and a science.
- Fire impacts people personally. It can be frightening; fire can destroy life and property. People personally experience fire after seeing in mass media their familiar landscapes burn. Even when we know that the land will rejuvenate, the change is disruptive to our psyche. Whether impacts are real or perceived, we are personally impacted by the fire event.
- More and more fire organizations are relying on fire plans that allow for an appropriate management response of wildland fire use and other modified suppression techniques. Explaining the why and how and when of these actions is an important step in the public and management acceptance process. Sometimes not putting the fire out immediately is the appropriate thing to do.
- Wildland fire management contains risks. Central to public understanding is conveying risk management options. Wildland fire communicators are risk communicators and therefore must frame their messages as risk communications.

Fire Education at Work



The Confederated Salish and Kootenai Tribes manage their land according to ecological principles and restoration goals developed in their ecosystem management based Forest Management Plan. The Tribes rely on the reintroduction of fire as to restore cultural landscapes that occurred prior to European settlement. The tribes fire management program has ultimate responsibility to plan and implement prescribed fire and other hazardous fuels reduction treatments. However, through the plan, these other disciplines have share responsibility to plan and coordinate these efforts so other program goals (wildlife diversity, threatened and endangered species, invasive species, cultural enhancement and restoration, wildland recreation) are achieved as well.

This story book (Beaver Steals Fire) is one example of several educational products that the Confederated Salish and Kootenai Tribes have developed as part of their effort to restore cultural landscapes through the use of fire. The Tribes Natural Resource Information and Education Office is outreaching to tribal members of all ages, communicating about the importance of wildland fire practiced traditionally and as part of today's wildland fire management program.

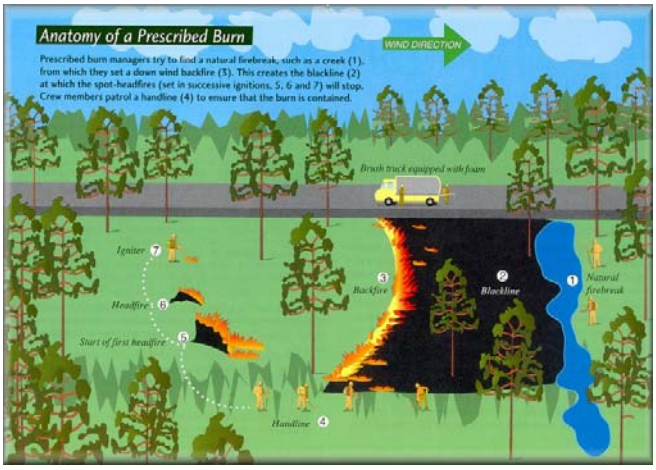
Prescribed Fire Presentations

Detailed information about developing a presentation is included in Chapter 4 of this guide. Listed below are considerations that apply specifically to prescribed fires.

An effective presentation will be enhanced with good visual aids: slide show narrated by the presenter, maps showing the prospective burn site; and, with good personal illustrations or stories of pre- and post-prescribed burn scenarios.

The following are points to be considered by the presenter in preparing a presentation about a prescribed fire:

- Who is the presenter (their credentials) and who is the audience (their vested interests)? Establish credibility of presenter and determine specific audience needs, concerns, or fears that must be addressed.
- Why was this area selected for a prescribed burn? Establish the specific needs for the designated area, and emphasize the consequences of non-action or alternate actions.
- What is a "prescribed burn," and why is it important for the area? If needed, explain and illustrate the most basic aspects of how a prescribed burn is conducted, and what are the conditions that allow it to occur. Strong and repeated emphasis should be placed on the goals of the prescribed burn, rather than the methods.
- What should the audience be aware of, alerted to, sensitive to (smoke, aesthetics, safety)? Issues dealing with smoke, fire control, aesthetics, safety, and the fact that the prescribed burn may not occur, or will only occur under ideal conditions must be addressed. Allow questions, but attempt to re-focus potentially hostile questions to recognition of the critical importance and the goals of the program.
- What can they do? The presentation should conclude with concrete and helpful things the audience can do to help the local program of prescribed burns. Examples can include: discussing the issues with their families, completing a feedback form on the presentation and/or the prescribed burn, posting at home a refrigerator note on urban interface safety tips, or local agency phone numbers, and local fire departments.
- Questions and Answers – Be sure to allow time for discussion, and encourage your audience to ask questions.



Graphic can be found at
www.fl-dof.com/wildfire/rx_anatomy.html#leftnav

Interpretive Programs

Interpretation is an "education activity which aims to reveal meaning and relationships through the use of original objects; by firsthand experience and by illustrative media, rather than simply to communicate factual information" (Tilden, 1957). Tilden continues by providing principles encouraging all interpretation to relate to the participant and reveal new and interesting information which provokes a physical or mental response. Tilden, who spoke from the perspective of the theater, saw great natural and cultural resource-based stories to be told.

One of those stories is wildland fire. This story, like almost no other, captivates the audience in that it impacts every sector (natural history, social, cultural, economic, etc.) of the ecosystem in which it burns. Wildland fire flames paint images in visitors' minds and provide vast opportunity for interpretation.

Fire ecology and wildland fire management are complex topics that provide a vast array of interpretable topics. In the wildlands and wildland/urban interface zones, almost every ecosystem function impacts or is impacted by fire. Fire stories are in essence ecosystem stories, especially when interpreting fire-dependent communities. The following sections are offered to assist projects with wildland fire interpretive programs and to help instruct new employees in their program preparation.

Some basic tenets of interpretation are:

- Interpreters are storytellers; people like stories and people learn from stories.
- Interpreters function in a leisure setting, and visitors wish to maintain that leisure mode.
- Interpretation is still rooted in the philosophy that Tilden presented in 1957.
- Interpretation should be mostly educational, with substantive science, philosophy, and management messages. These must be translated, not "watered down" for the visitor.
- Interpretive programs, literature, and other media should be thematic in nature having a central topic (e.g., wildland fire) and a recurring message throughout the program (e.g., fighting fire with fire). It is this recurring message that drives home the interpreter's objective and helps the audience stay focused on the bigger story being told.
- Interpreters are hosts, guides, leaders, spokespersons, and covert educators. They are accepting of visitors' experiences and knowledge or the lack thereof; they are not expecting anything more than a good audience.

Guide activities and other personal services are effective in responding to immediate questions when flames and smoke are in the background or visitors are experiencing a burned patchwork landscape.

During the fires in Yellowstone in 1988, the National Park Service made extensive use of roadside interpreters during the fire event. While visitors heard the mass media present how the ecosystem was being destroyed, interpreters (often staffing roadblocks) explained to visitors in a less sensational manner the depth and truth of the message. So great was the misinformation that Yellowstone National Park formed a Fire Interpretation Resource Education (FIRE) outreach team that traveled to local communities in the region to explain the impact of the fire.

Guided tours into fire impacted sites are conducted by nongovernmental organizations, such as The Nature Conservancy, and by federal, state, and private resource management organizations. Such personal services are extremely important in educating the public that fire in wildlands is often viewed only as a destructive force. With such misconceptions, many people focus only on the

destruction. It is here that the interpreter, on-site or carrying the message off-site, conveys the message of the natural role of fire in managing ecosystems and the story of ecological rebirth.

So great is the fear of fire, and so great is the attraction to fire, that substantial resources are warranted to support personal services related to wildland fire management. Likewise, the potential for public relations problems is so great that interpreters, public affairs/information education officers, and senior leadership personnel should be available to personally interpret fire events.

Keep in mind that often the personal on-site interpretation can be a briefing for media which is then transmitted to users of mass media. Thus, it becomes necessary for us as interpreters to brief news sources in such a way that they relate to the messages and are provoked to reveal the substance of the story. Thus, personal contact with media sources is critical. Supplement this contact with a comprehensive media package containing background information (fire ecology, agency policy, fire management plans, etc.), fire history/fire regime of the region, stock photos and file footage if available, and a list of contacts with names, addresses, telephone numbers, and e-mail addresses. Think of all the errors you have seen in news reporting relating to wildland fire (long-term effects, “good fire” vs. “bad fire”) and equip your media contacts with the data they need to potentially prevent those mistakes. Most important, though, is interpreting fire events in such a manner that reporters will not need to fill in the gaps of information with sensationalism and their conventional wisdom to make a good story. Wildland fire is a good story on its own, without embellishment.

Resources relating to the process can be found in Chapter 10. It is by no means an exhaustive list. Numerous federal and state agencies have videotapes, printed and similar materials available for their employees. Likewise, a number of professional associations, such as the National Association for Interpretation and the North American Association for Environmental Education, provide for interpretive conferences and training opportunities.