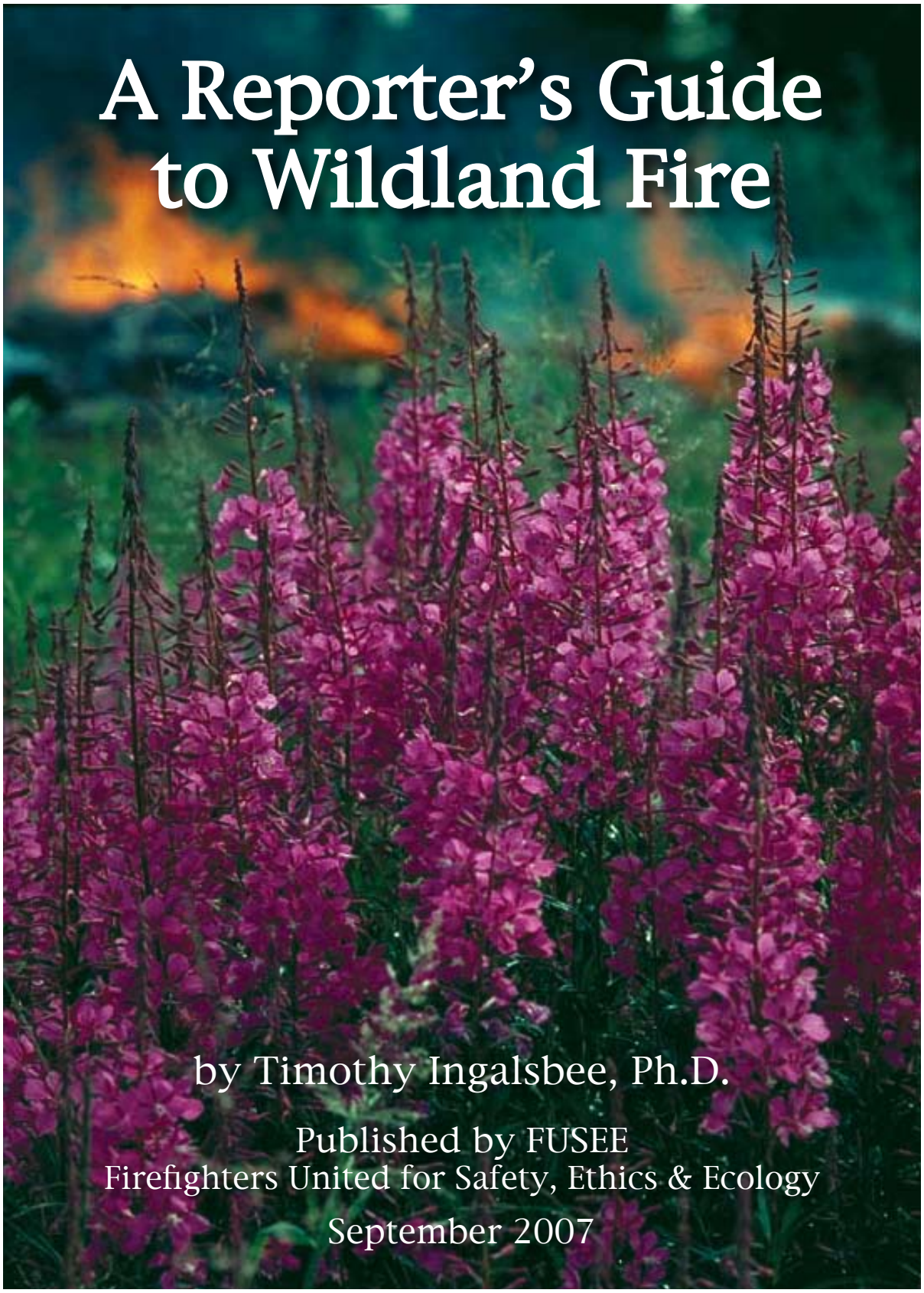

A Reporter's Guide to Wildland Fire

by Timothy Ingalsbee, Ph.D.

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ABOUT FIREFIGHTERS UNITED FOR SAFETY, ETHICS and ECOLOGY (FUSEE): FUSEE (pronounced FEW-zee) is a national nonprofit organization founded in 2004 that is dedicated to public education and policy advocacy to promote safe, ethical and ecological fire management. FUSEE members include current and former wildland firefighters, other fire management workers, fire researchers and educators, forest conservationists, rural homeowners and other interested citizens. A "fusee" is a quick-igniting, handheld torch used by firefighters to secure firelines, create safety zones, reduce hazardous fuel loads and restore fire-adapted ecosystems. FUSEE informs, inspires and empowers firefighters and their citizen supporters to become *torchbearers* for a new paradigm in fire management.

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Cover photo: Fireweed (Epilobium angustifolium) grows in burned sites throughout the western U.S. and Canada. It often sprouts the first summer following a wildland fire.

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SECTION ONE

Introduction: Getting Beyond Incendiary Rhetoric

Every year thousands of wildland fires, large and small, ignite and burn across the U.S. The largest, most severe wildfires provide reporters with all the elements needed for exciting news stories: Crisis and conflict, drama and suspense, death and destruction. Wildfire stories also carry a ready-made template for framing the story, identifying the main characters and describing the unfolding events.

However, wildfire stories often tend to follow a standard script that sometimes verges on sensationalist hype and hysteria. This tendency is rooted in the dominant cultural attitude toward fire, and can be exacerbated by the intense commercial pressures of the news business. The net result may produce riveting stories, but misses valuable opportunities to more accurately and fully inform the public with the ***whole*** story.

News coverage of wildfire events has improved since the original publication of *A Reporter's Guide to Wildland Fire* in January 2005, but there is still a lot of new ground waiting for journalists to cover. The 2006 and 2007 wildfire seasons initiated some significant changes in fire management policies and on-the-ground suppression practices that provide evidence of a nascent paradigm shift underway within federal fire management agencies, and reporters have yet to break this story. Getting the whole story about wildland fire means uncovering this emerging shift in policies and practices, as well as including the social, political, economic and ecological context of wildfire events and our responses to them. It means capturing the diversity of the wildland fire community, and those communities affected by wildland fires. Indeed, the whole story of wildland fire includes so much more than fighting wildfires!

This *Reporter's Guide to Wildland Fire* is intended to help journalists improve the accuracy, quality and value of their stories on wildfire events and fire management. Using tips and tools in this *Reporter's Guide* will help journalists produce more powerful, informative and even inspiring news stories that reflect the best ideals of journalism. It is also hoped that this *Guide* will inspire more alternative and investigative reporting on wildfire events including a broader array of fire management issues beyond the stereotypical focus on emergency firefighting only.

War Metaphor

One of the biggest challenges for journalists is getting beyond the "war" metaphor that frames so many news stories about wildfire events. Part of the challenge is that military models and metaphors are pervasive in the discourse of fire management, beginning with the concept of fire ***fighting*** and extending to the array of suppression strategies and tactics all defined as various kinds of ***attack***. Yet, when journalists use language like "fighting fires" or "battling blazes," they are not necessarily reporting the facts, but are actually utilizing terms loaded with ideological content. Indeed, overheated "incendiary" rhetoric about the ***"war on wildfire"*** is both inaccurate and irresponsible. By essentially ***militarizing*** **fire management issues,** conventional news stories inhibit informed public debate over alternative policies and practices, new policies that might help our society resolve its continual crises and conflicts with wildland fire.

Journalists are not solely to blame for using hackneyed war metaphors, for they represent dominant cultural attitudes about forest fires that are often perpetuated by official government sources. But what exactly are the implications of a society that is perpetually making "war" on wildland fire, essentially a war on America's wildlands? What are the environmental effects of "fighting" fires in backcountry forests that depend on fire as a natural ecological process? And what are the political and economic interests of the firefighting establishment—the agency officials and private contractors—who have vested stakes in perpetuating the so-called "war"? These are the tougher questions hard-hitting journalists need to ask.

In fact, the federal government's antagonistic stance toward wildfire is barely a century old, and stands in stark contrast to humankind's vital relationship living with and using the benefits of wildland fires that spans millennia. This cultural and ecological legacy, as well as a broad range of contemporary fire management activities aimed at restoring historic fire regimes, are obscured by the continued use of the "war on wildfire" metaphor. Please refer to Section VI of this *Guide* for suggested alternative terminology that more accurately portrays the nature of wildland fires and their social and ecological effects.

Catastrophe Mentality

After the war metaphor, the next most popular way to portray wildfire events is that they are universally "destructive" and "catastrophic." Language describing fires as "consuming" acres and enumerating acres "lost" to wildfire bolsters that image of catastrophe. There is the widespread assumption conveyed in most news accounts that every acre within a wildfire perimeter was burned, and burned with high severity (e.g. killed most or all of the trees on that site).

In actuality, most large-scale wildfires that are mistakenly labeled as "catastrophic" instead exhibit a broad range of effects from low to high severity. There can be large areas within wildfire perimeters that are completely untouched by the fire. For example, Forest Service analysis of the largest wildfires of the 2002 season (the Biscuit, Hayman, McNalley and Rodeo-Chediski fires) reveals that, on average, only 23% of these areas burned with high severity; 24% had moderate severity; and **52% of these areas experienced *low* severity or were *unburned!***

The diverse effects of fire across landscapes have been called the "fire mosaic," and it facilitates rich biological diversity. In most cases, new vegetation starts to grow even on the most severely burned sites within a few weeks after the smoke as cleared. If journalists were to follow up with stories written a year or two or especially a decade later, what was formerly viewed as a "catastrophe" would more accurately be described as *change*. The concept of *phoenix forests* arising out of the ashes would become more readily understood.

Forest and fire ecologists now recognize the natural diversity of fire behavior and effects, and take a longer-term view of forest dynamics. It is time for journalists to take a longer view, too, and maintain a critical and skeptical stance toward official "crises-mongers" that promote the catastrophe mentality when speaking about wildland fires. Otherwise, reporters play into the hands of powerful interests who seek to profit from public perceptions of wildland fires as "catastrophes" and "crises." For example: Government agencies who gain enormous powers to fight fires without any fiscal constraint or public accountability, and private logging companies who gain windfall profits from "salvage" logging burned trees with little or no regulatory restraint, both under self-proclaimed "states of emergency."

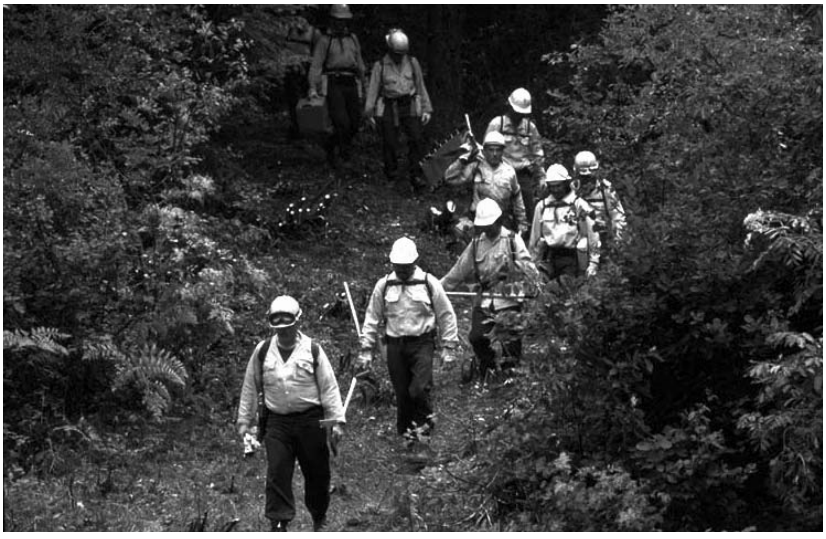
Usual Suspects: Villainous Wildfire, Victimized Homeowners, Valorized Firefighters

Along with news stories using the war metaphor and catastrophe mentality comes a common cast of characters: Wildfire is the villain, homeowners are its victims and firefighters are heroes. But these characterizations are overused and inaccurate. The one-dimensional view of wildland fire as a purely destructive agent—notorious "demon fire"—ignores the essential fact that fire can also be a creative biological force that provides many beneficial ecological and economic services.

The routine depiction of homeowners as helpless, hapless victims threatened by wildfire denies them personal responsibility for actions they took or failed to take in order to protect their homes and properties. Finally, though on an individual level many firefighters are dedicated public servants who do exhibit bravery and perform heroic acts, this typical portrayal can obscure the power and profit incentives that on an institutional or organizational level motivate some public agencies, private companies and individual workers to engage in firefighting.

For example, federal agencies can engage in deficit spending for firefighting, and use fire funds to supplement declining budgets and limited salaries. Private companies can reap lucrative "no bid" government contracts for supplying firefighting labor, equipment and supplies; yet they face minimal public scrutiny or agency oversight to assess the quality of the goods or services provided. See Section III of this *Guide* for more leads on the taxpayer costs and private economic incentives of firefighting.

Thus, characterizations of wildfire events as wars or catastrophes creating helpless victims and heroic victors make for predicable stories full of drama and conflict, but do very little to advance public understanding of reality. Characterizations from the past do little to spark imagination for developing alternatives to the agencies' dominant paradigm of fire management. For all of the above reasons and more, FUSEE believes it is time for journalists to break out of trite story molds that frame so many wildfire articles, and start using alternative angles, critical analyses and more accurate descriptions of wildland fire events and issues. Using the tips and tools in this *Reporter's Guide to Wildland Fire*, news stories will likely become less incendiary but more *enlightening* in communicating the hard facts, real issues and the whole story to the public.



SECTION II

Fireside Chats: Getting Beyond Official Sources for Information and Interviews

Surprisingly, reporters are more tightly controlled in covering domestic wildfire incidents than they are on foreign military combat operations. In the war against Iraq, for example, the U.S. military allows "embedded reporters" to accompany troops on the front lines of battle, but very few similar opportunities are offered to reporters to visit firelines and observe firefighting crews. If reporters get to the fireline at all, it is usually in the form of press pools for brief tours escorted by agency fire information officers under carefully prescribed conditions.

The agencies claim they have nothing to hide, and official escorts are for a reporter's own good. But an official media handbook warns agency employees about photographers and reporters:

> *"They should never be allowed out of the fire camp unescorted. It is too easy for them to get lost and/or hurt wandering around a fire by themselves. They might also see some control activities that they don't understand, like a backfire being set, and get the wrong impression: 'Fire fighters start a massive forest fire.'"* [source: National Wildfire Coordinating Group. 1982. Fire Information Officer's Guide. PMS 411-1, NFES 0383. Pg.13].

Consequently, reporters are mostly contained and controlled within the safe confines of fire camps, where they are almost exclusively dependent upon official government spokespersons to inform them of firefighting operations and events.

In March 2004, federal agencies developed new guidelines to provide better media access to wildland fires, including escorted visits to firelines. Although the guidelines state that denials should be rare, press access to firelines is still considered a privilege, not a right, which requires the approval of fire incident commanders. The vast majority of sources interviewed for fire stories are thus Forest Service incident commanders, public affairs officers or fire information officers. Most of these employees are dedicated, hard-working professionals, but they are also trained and instructed to weave agency-directed "management messages" into the information they present to reporters as "the facts." [source: National Wildfire Coordinating Group. 1982. Fire Information Officer's Guide. PMS 411-1/NFES 0383. USDA/USDI/NASF. pg.1]

The few exceptions to these official voices are the occasional interviews with local residents, usually discussing such things as their fears of the fire, steps they are taking to prepare for evacuation or protect their property and their admiration and gratitude for the firefighters. **The rarest voice of all interviewed in wildfire stories are *ground-level firefighters* speaking directly from the firelines**. It is incumbent upon journalists to expand the range of their information and interview sources used to report fire news. Below are some alternative sources that FUSEE urges reporters to interview.

Wildland Firefighters

The first new sources to seek are ground-level wildland firefighters. Their voices will certainly add color to stories, but more importantly, may reveal another valuable "grounded" perspective of fire issues, different than that provided by official spokespersons. See Section IV of this *Guide* for some suggested questions about suppression operations to ask firefighters in the field. Reporters would do

well to offer anonymity to ground-level firefighters, too, since they face potential retaliation on the job for speaking critically about government operations.

Reporters need to demand interview access to fire crews, and should insist on the ***right*** **to observe firefighters in action on the *firelines***, not just in fire camp. Observing and interviewing firefighters on the fireline will expose journalists to some of the safety risks, health hazards, misery, fear and boredom, as well as excitement and adventure, that makes up the lot of wildland firefighters. These experiences may prompt new angles and critical perspectives than the typical glorified firefighting story written from the safe confines of fire camp.

Fire Scientists and Fire Ecologists

Other sources to interview in order to gain greater context for reporting fires include various fire experts such as scientists and ecologists. These people can help explain the broader context for wildland fire events. Examples include: The natural ecological role of fire, the specific fire history or fire regime of a given place, the expected biological and physical effects of the fire, the influence of past management activities on fire behavior and fire effects.

Interviewing fire scientists and fire ecologists provides balance to the perspective of fire managers, and adds a valuable educational component to the news. The outcome might be to help **make fires seem less *"alien"*** and more understandable to people, thereby diminishing some of the fear and hatred of fires that results from patented sensationalistic wildfire accounts that fail to provide any scientific, ecological or historical context for these events.

Local Homeowners and Community Members

When interviewing in rural areas, remember: No two homeowners are alike. Those who have taken proactive steps to prepare their homes for living in a fire environment using "FIREWISE" principles might offer a completely different perspective than those homeowners who have done little or nothing to prepare their properties. Reporters might even be surprised to discover that there are some people who refuse to leave their homes when authorities give evacuation orders, and instead, choose to ***"shelter in place"*** and stay to protect their homes. These people are more often isolated homeowners living in the rural/wildland "intermix" (as opposed to the urban/wildland "interface") who do not always show up at town meetings convened by fire officials. Reporters may have to go out into the hinterland and seek them out.

Small Business Owners

Other voices from rural America that offer valuable perspectives are small business owners. Typically, news media report wildfires as causing economic disasters in rural communities either through the "destruction" of natural resources or the disruption of tourist activities. However, many merchants and other **local businesses can make *windfall profits* while wildfires are burning** by providing goods and services to firefighters. Additionally, some tourist-related businesses may have their incomes temporarily suspended while a fire is burning, but the beneficial ecological effects of fire may more than compensate them for their losses. This is especially true for hunting and fishing guides, for example, when fires help produce excellent foraging habitat for big game and superior spawning habitat for wild fish. Fires can also create new commercial opportunities for harvesting wild mushrooms and berries in burned areas.

Big fires can also become *tourist attractions* in themselves, as was discovered following the Yellowstone Fires of 1988. While news media had reported that the nation's premier national park had been "destroyed" by wildfire, the rich displays of wildflowers and bison flourishing in some of the most severely burned areas of the park debunked this image. Tourists continued to come to the park to the delight of local tourist-dependent businesses. Such "enlightened" business owners who can acknowledge the economic opportunities resulting from wildfires are worthy voices to interview, helping to balance the predictable "doom and gloom" voices. So are the tourists who intentionally or accidentally visit burned forests.

Conservation Volunteers and Timber Workers

Finally, reporters will occasionally interview paid staff and official representatives of forest conservation organizations and logging companies. Often, specific wildfire events become proxies for ongoing public debates over federal land management policies. The fire issue often becomes reduced to a debate over commercial logging, as happens to most journalistic accounts of controversial forest management issues.

Reporters gather plenty of "spin" from professional agency staff and public relations firms, but media have largely failed to investigate the attitudes and beliefs held by conservationist volunteers, timber workers and ordinary citizens about a whole array of fire-related issues. Timber workers and conservation volunteers—distinct from business executives and professional staff—are still mainly an untapped source of information and interview material. One of the biggest stories yet to be fully told is the growing support among conservationists and timber workers for ecologically-based small-diameter understory tree thinning—qualitatively distinct from large-diameter overstory logging—as a means of reducing wildfire hazards and preparing sites for prescribed burning while generating jobs for local communities and woodsworkers.

SECTION III

Smoke Reports: Covering Underreported Issues

The typical "boilerplate" fire story focuses on how big the wildfire is, how much damage it is causing, how many people are fighting the fire, and which local communities are threatened by the fire's potential spread. These angles are sometimes supplemented by human-interest stories, such as the personal tragedies of people who have lost their homes to wildfire, or firefighters who were injured or killed. These story frames are quick, easy and safe for reporters to apply.

But there are many other aspects to wildfire events and fire management issues that do not get the coverage they deserve. These underreported issues may be less dramatic than daily "battle reports," but they involve important, newsworthy information about the systemic sources of and potential solutions to wildfire "catastrophes" and the wildfire "crisis."

In some cases, covering these necessary issues may only require an alternative perspective, using a different frame, language or set of questions to cover the same events or issues. In other cases, it will require some investigative reporting to discover suppressed information and alternative sources, requiring more investment by journalists to get the whole story.

Risks to Firefighter Safety

Each and every single fire suppression incident involves a certain degree of health hazards and safety risks for wildland firefighters. According to statistics compiled by the National Interagency Fire Center, there have been 945 firefighter fatalities since 1910. The largest cause of fatal accidents is being burned over by the wildfire, but a significant and growing percentage of fatalities are related to aircraft and motor vehicle crashes, and health-related events such as heart attacks. Beyond actual fatalities, there are scores of injuries and illnesses among firefighters that are recorded by fire officials, but are never reported in the press.

Many of these injuries are minor: Bee stings, poison oak rash, blisters, bruises, cuts and abrasions and head colds usually don't make newsworthy items. But there is occasionally the drama of helicopter evacuations from remote firelines when some firefighter goes into anaphylactic shock from a bee sting, or when firefighters are sent to hospitals after their eyes swell shut from poison oak rash, or when illnesses like bronchitis afflict dozens of people in smoke-inundated fire camps.

These non-fatal diseases and injuries are hardly ever reported. There is also the ever-present health issue of fireline accidents—called "near misses" by firefighters—that are often caused by the cumulative effects of sleep deprivation and smoke inhalation along with the inherent hazards of fighting fire. There are also the added risks of specific suppression tactics or strategies, such as aggressive direct attack in flashy fuel types or intensive mop-up on steep, rocky slopes deep within burned-over snag patches. There are long-term health risks related to inhalation of wood smoke, whose symptoms may not appear for decades later among long-term firefighters and fuels crew members.

These relatively frequent firefighter illnesses and injuries, as well as the occasional fatality, are not only of human interest, but can reveal more systematic problems occurring within the fire bureaucracy, as well as the very nature of the tasks of fire management. Firefighter safety is the number one priority for all fire management actions, but firefighting is inherently hazardous duty,

and seasonal firefighters get no health care benefits besides workmen's compensation. It would be a valuable lesson for the public to learn via news media accounts that there is "collateral damage" in the form of health hazards and human casualties involved in making "warfare" on wildfire.

Taxpayer Costs of Fighting Fire

Reporters are usually good about reporting on a specific fire's total cumulative costs-to-date of suppression operations. But these days of record-breaking multi-billion dollar federal budget deficits, such figures are having reduced impact on public consciousness. Rarely do reporters break down the total suppression costs of a given wildfire incident, and provide analysis of where the bulk of taxpayer funds are going.

First, there is the issue of rising costs and budget deficits for suppression expenditures. This issue is, in fact, gaining news coverage, especially the Forest Service's practice of "borrowing" funds from other programs in order to pay for budget deficits in the suppression program.

Stories have reported the apparent absurdity of taking money from fire prevention and fuels reduction programs in order to pay for fire suppression. But **just like the Pentagon during times of war, the Forest Service is the only other federal bureaucracy that can engage in deficit spending to fight wildfires**, and critics have charged that there is a lack of fiscal constraint or accountability in suppression spending.

In fact, Incident Commanders have few incentives for reducing taxpayer costs, and face no penalties for making costly decisions. As internal Forest Service reports reveal, there is a widespread "spare no expense, blank check" attitude among fire commanders:

> *"The Forest Service manages emergency firefighting funds as if they are unbudgeted, unlimited, unallocated and without benchmarks on acceptable spending levels. This environment provides the appearance of no accountability."* [source: USDA-Forest Service. 2000. An Agency Strategy for Fire Management: Report from the National Management Review Team. Washington, D.C. January 12]

Enterprising reporters will likely discover a significant amount of waste and theft occurring inside fire camps. Resources are often "hoarded," meaning more dozers, for example, are ordered from fire dispatch centers than may be needed at the moment. And occasionally there are some firefighters who will try to take some tool or piece of equipment home with them from an incident's fire cache.

But investigative reporters may discover more questionable expenses and taxpayer losses because of the exorbitant rates the federal government pays to private contractors for crews, equipment, goods and services. The growing privatization of federal firefighting operations, and the increasing monopolization of firefighting companies, is significantly accelerating under the second Bush Administration, but this issue has escaped most journalists' attention.

There are a number of important economic issues to cover: The high payments for contractors, the growing political involvement of lobbying organizations representing the private firefighting industry, the lack of accountability and restraint in government purchasing decisions. In some cases, the government pays far greater amounts to lease equipment from contractors than they would if they simply purchased the items outright. FUSEE firefighters argue that waste and abuse of taxpayers'

resources is fundamentally an ethical issue that adversely affects firefighter safety, and begs for the watchdog role of the media.

Finally, while reporting on suppression costs and examining some of the economic issues of suppression, journalists should translate total or daily cost figures into more comprehensible terms for the average reader. These would include calculations of the dollars-per-minute, per-hour or per-firefighter that the federal agencies pay private contractors to lease helicopters, heavy equipment and motor vehicles or to purchase various goods and services such as meals and showers.

Broken down into more comprehensible figures, **the economic costs of suppression operations will likely appear alarming, if not *scandalous,*** to some readers, and will provide a valuable alternative perspective for great articles addressing the economic aspects of fire management.

Environmental Impacts of Firefighting

Contrary to notions that firefighting "protects" natural resources from "destruction," fighting fires causes its own set of environmental impacts that in some cases can be more significant and long-lasting than the effects of wildfire alone. [source: Backer, D.M.; Jensen, S.E.; and G.R. McPherson. 2004. Impacts of Fire-Suppression Activities on Natural Communities. Conservation Biology 18(4): 937-946]

Some of the adverse environmental impacts from aggressive wildfire suppression include: Soil compaction and erosion and stream sedimentation from firelines and especially dozerlines; water pollution from fire retardants; old-growth logging from "hazard" tree removal; high-severity burning from backfires and burnouts, just to name a few. For a comprehensive primer on firefighting actions and their environmental impacts, see the report, "Collateral Damage: The Environmental Effects of Firefighting," archived at: http://www.fire-ecology.org/research/biscuit_suppression.html.

However, unlike every other major ground-disturbing land management activity—such as logging, road-building, grazing or mining—firefighting stands alone as a programmed activity that agencies do not subject to federal environmental protection or public disclosure laws. **The federal government has *never* systematically examined or scientifically analyzed the environmental impacts of firefighting**. This is a huge void that needs to be covered by the press.

Firefighting damages are not too difficult to discover; reporters just need to know who and what to ask, and where to look. In Section IV of this *Reporter's Guide to Wildland Fire*, a list of questions is offered to help journalists get at this information from government spokespersons. But the real people to ask and places to look are firefighters on the frontlines. Again, it has been argued that journalists are tightly controlled by government agencies and largely excluded from speaking to firefighters on the firelines, but members of the press are going to have to demand this kind of access in order to get this type of story.

Many federal bureaucrats and elected officials have the opinion that the majority of people do not care about environmental damages caused by firefighting—people just want wildfires put out no matter what. Similar to actual combat operations, there will be strong proponents of a kind of "patriotism" that espouses "my government, right or wrong."

But the more the public learns via news stories about fire ecology and how many forest ecosystems are adapted to, depend upon or benefit from fire and the more the public learns about the short-term damages and long-term negative impacts of firefighting, the more a critical perspective on the costs and impacts of suppression will become an accepted and important angle for fire reporting. FUSEE firefighters believe the press should inform the public about this serious albeit suppressed environmental issue that represents institutional, political and policy choices.

Benefits of Prescribed Burning and Wildland Fire Use

Fire professionals are keenly aware of a double-standard in fire management: Whereas high-intensity backfires can be ignited during suppression incidents, causing extensive damage to natural resources, these firing operations will not be challenged or criticized by news media. Low-intensity prescribed burning operations, on the other hand, will either go unreported (except for stories about local residents complaining about smoke emissions), or if a prescribed burn escapes control and becomes a wildfire, then the responsible agency or crew will get "crucified" in the press. This famously occurred during the 2000 Cerro Grande fire in New Mexico despite the fact that it was a suppression backfire—not the original prescribed fire—that burned into Los Alamos and destroyed more than 200 homes. Thus, the double-standard works such that fire professionals believe if you ignite a severe backfire that burns uncontrollably the press will celebrate you as a hero, but if you ignite a prescribed fire that "slops over" the fireline the press will castigate you as a villain. [sources: http://www.fire-ecology.org/citizen/cerro_grande_myths.html. See also: http://www.fseee.org/forestmag/losalamosreport.shtml]

Wildland Fire Use (WFU), formerly called "prescribed natural fires," are lightning-caused fires mostly in designated wilderness areas that are not actively suppressed. Instead, these fires are allowed to burn for ecological and resource benefits. These WFU incidents always require a plan, an incident management team and firefighters to monitor and manage the fire, and this can entail significant numbers of personnel and resources.

Wildland Fire Use incidents are *managed* wildland fires; regardless, the press often erroneously labels these fire management operations as "let burn." The implication is that these are unfettered wildfires burning out of control and unattended. The fact is that vastly more acres of forestland need to be burned than agencies have the resources or ability to ignite. Natural ignitions provide opportunities to reintroduce beneficial fires into ecosystems at reduced costs than management-ignited prescribed burns. WFU provides a means for avoiding the safety risks, economic costs and environmental impacts of aggressive fire suppression.

Wildland Fire Use operations do not generate the same kind of media coverage as suppression incidents, probably because they tend to occur in more remote wildlands that do not threaten private homes or communities. It is also possible that they do not attract reporter's attention because managing wildland fires does not fit the same dramatic "combat" frame as fighting wildfires.

But, it is a vital necessity for the public to understand and eventually accept a greater role of natural and prescribed fire in forest ecosystems. Expanded WFU opportunities are going to be a principal means of reintroducing fires, especially into remote natural areas.

If reporters choose to cover WFU incidents, they may be surprised to discover many of the same tools, equipment and tactics conducted on suppression operations, only these would be used to "put

fires *in*" instead of "put fires out." Accordingly, WFU stories can be written in dramatic, heroic, action-filled terms, too.

At a minimum, though, journalists need to end the double standard in fire reporting: Their uncritical if not unquestioningly positive coverage of suppression operations no matter how costly or destructive; contrasted to their skeptical, alarmist, negative coverage of WFU and prescribed burning operations (if there is any coverage of these operations at all).

Role of Climate Change in Large Wildfires

Another underreported issue that seems to be gaining more credence as a potential angle for writing is the role of climate change or "global warming" in the growing frequency of large-scale severe wildfires. Scientific evidence is accumulating that global warming is causing changes in weather and vegetation patterns that is more conducive to rapid fire spread and high fire intensity. For the best synopsis of the best available science on the role of global warming in current wildfire dynamics, see the San Diego Declaration on Climate Change and Fire Management. [http://www.fusee.org/content_pages/docs/San%20Diego%20Declaration.pdf]

Whole regions of the country are experiencing prolonged drought, higher temperatures and more storm activity (especially dry lightning), and these trends in changes in weather conditions are highly correlated with large wildfire events since the late 1980s. Most climate researchers warn that we have just begun to see the rise in temperatures, changes in precipitation patterns, shifts in vegetation cover and increasing frequency of extreme weather events that are in store in the future as a result of global warming. Add to this list the increasing frequency of large-scale, high-severity wildfires resulting from these changes in climate. Consequently, the energy and climate policies of the current Administration and Congress deserve some critical media scrutiny and coverage in reporting on wildfire events.

Influence of Past Commercial Logging and Livestock Grazing on Wildfire

In the debates over the Bush Administration's "Healthy Forests Initiative" and subsequent "Healthy Forests Restoration Act" of 2003, news media largely failed to take the environmental community's criticisms of commercial logging seriously. These were not simply ideologically-based charges against future logging in theory, but science-based critiques with historical and empirical data on the legacy of commercial logging and livestock grazing and their effects on current wildfire events.

Journalists did not have to rely solely on the words of environmentalists, but could have easily witnessed for themselves the relationship between logging and wildfire. This opportunity is still available to the media to pursue. It is a relatively easy operation for journalists to fly over recent burned areas and observe the patterns of fire severity.

In general, the most severely-burned areas of the fire tend to be located within roaded and logged areas. Journalists can clearly see for themselves that clearcuts and young timber plantations tend to be uniformly and severely burned from wildfires. These distinct cutover patches are easily distinguished from adjacent uncut areas, and reveal that **burned clearcuts are the closest things to the proverbial "*moonscape*" scene of a treeless, lifeless, scorched Earth**.

As well, journalists can see the effects of burned logged areas on adjacent unlogged stands. Young timber plantations tend to cause higher mortality effects on adjacent old-growth stands. However, outside the fragmented general forest with its isolated "islands" of old-growth stands amidst a virtual sea of plantations, unroaded and unlogged areas tend to exhibit more of a diverse or mosaic pattern of fire effects, with old-growth stands showing less uniform severity or mortality.

Given the effects of past logging on current wildfires, how will future logging have different effects on future wildfires? Journalists do not need to approach that question purely as a matter of faith or theoretical conjecture, as logging proponents would have them do, but can look to the recent past as a guide to the future. Accordingly, in reporting on future wildfire events, journalists should directly address this issue, and question the glowing, optimistic and unfounded claims that increased logging will decrease wildfire size and severity.

In sum, the above items represent underreported issues that are ripe for journalists to take some initiative and investigate. Reporting these issues will distinguish more these reporters from the rest of the pack, better inform the public about systemic policy or institutional problems, alert citizens about potential solutions and expose possible non-solutions.

SECTION IV

Questioning Authority: Asking Critical Questions of Government Fire Officials

Reporters take great personal and professional pride in asking tough questions of government officials, but when it comes to reporting on wildfires, they routinely fail to ask the important, critical questions about the land management objectives, and the strategies and tactics of fire suppression operations.

News media often fail to recognize that the specific decisions of fire incident commanders are not simply neutral reactions to natural events, but instead, reflect personal choices, cultural biases and institutional motives that can be laden with the influence of wider social, political and economic interests.

The majority of wildfire news stories differ little in style from a typical sports story or battle report: The focus on "acres burned" or "structures lost" is analogous to *box scores* or *body counts*, and reveals little about the real human drama of risk-taking and decision-making underlying the actual events in the field. Asking the *hard questions* of agency officials will not only lead to greater public awareness of the risks, costs and impacts of various firefighting strategies and tactics, but may also lead to greater government accountability for managers' decisions and actions.

Reporters need to start challenging the unspoken assumptions held by fire managers that no economic expense or environmental impact should be spared in putting wildfires out because wildfires are such terrible "catastrophic" disasters. **Reporters need to ask *why* certain suppression strategies or tactics are being selected, and *what* are the firefighter and public safety risks, taxpayer costs and environmental impacts associated with them**.

Below are some examples of specific questions arranged by topic to ask fire officials in order to get the full story:

Firelines

Official spokespersons will disclose the location and length of firelines and how many firefighters are working, but may not reveal much else.

Critical questions to ask:

- How much fireline has been constructed by handcrews versus heavy equipment?
- What kinds of heavy equipment are being used (e.g. bulldozers, fellerbunchers)?
- Have dozerlines been constructed in unroaded or inventoried roadless areas?
- Are firelines going through sensitive natural areas (e.g. old-growth stands, endangered species habitats, fragile soils, heritage sites, scenic areas)?
- Are mature or old-growth trees being felled for firelines, and if so, are they being cut-to-length and decked for commercial removal?
- What are some of the environmental impacts caused by the firelines?
- How many secondary and contingency firelines are being constructed? How far are these located from the wildfire perimeter?
- If firelines are located for "indirect attack," then are managers planning to create a large-scale wildfire by design?

- How many interior firelines have been breached by the fire and abandoned?
- What are the costs per linear mile of firelines constructed to date?

Chemical Fire Retardants

Retardant drops by airtankers and helicopters make dramatic film footage, but official spokespersons may not disclose information on the environmental effects or operational ineffectiveness of many retardant drops.

Critical questions to ask:

- What kinds of retardant chemicals are being used? (e.g. Fire Trol versus Phos Chek. These brand names contain different kinds of toxic chemicals)
- What parts of the fire have received retardant drops (e.g. head, flanks, hotspots)?
- What have been the effects of retardant drops on the fire's intensity and rate of spread?
- Are there ground crews in position to take advantage of retardant drops?
- What might be the effects of retardants on water quality, soil chemistry and vegetation?
- Have retardants fallen into any fish-bearing streams? (Retardant chemicals are highly toxic to aquatic wildlife)
- Were the aircraft used to deliver water and/or retardant during the mop-up stage of the fire?
- What are the costs per gallon/per load of retardant? What are the total costs to date of retardant use?
- What percentage of the total fire cost is because of aircraft use?

Suppression Firing Operations (Burnouts and Backfires)

It is routine for firefighters to start fires as a means of suppressing wildfires, but spokespersons will rarely explain the purpose, locations and methods for firing operations which, in several instances, plays a major factor in the growing size and severity of recent wildfires.

Critical questions to ask:

- Are firefighters starting backfires or burnouts (be specific)?
- What is the purpose of firing operations?
- Where are the locations of firing operations in relation to firelines and the edge of the wildfire?
- Have all firing operations merged with the main fire, or have they started separate spotfires?
- How many acres have been added to the total fire size because of backfiring or burnout operations?
- What are the ignition devices being used (e.g. driptorches, fusees, helitorches, ping-pong balls)?
- What times have the firing operations been conducted (e.g. morning, afternoon, evening)?
- What are the expected behavior of firing operations (e.g. what will be the intensity, flame length and rate of spread of backfires/burnouts)?
- Are firing operations occurring within sensitive natural areas (e.g. old-growth stands, endangered species habitats, heritage sites, scenic/recreational areas)?
- What are the expected environmental effects of firing operations (e.g. what will be the severity, impacts on soils, mortality of overstory trees)?
- Have there been any "near misses" of firefighters getting entrapped or burned over during firing operations?

Fire Costs

Spokespersons may occasionally reveal total cumulative suppression costs, but there's more to the story.

Critical questions to ask:

- What have been the actual and predicted costs of suppression operations?
- What was the cost per acre of suppression operations?
- How much money is going to private contractors?
- What is the hourly/daily rate for contractors to provide such things as handcrews, engines, water tenders, dozers, helicopters, aircraft?
- What is the loss rate of non-consumable property and supplies? (The "Redbook" fire management manual 14-8 defines acceptable losses to be no more than 15%.)

Suppression Strategy and Rationale

It is time to stop assuming that all fires in all places must always be aggressively suppressed. In fact, forest and fire managers have many options available for implementing the Appropriate Management Response, provided they have done the necessary pre-planning and preparation.

Critical questions to ask:

- Does the Forest/Park unit have a current approved Fire Management Plan (FMP)?
- Does the FMP fully comply with the Federal Wildland Fire Management Policy?
- Is the FMP being used and implemented during the suppression incident?
- What is the natural fire ecology and historical fire regime of the wildfire area (i.e. what is the relationship of the native vegetation to wildland fire, and what is the expected frequency and severity of wildland fires)?
- What plant or animal species might benefit from the effects of the fire?
- What kinds of fuels reduction and forest restoration goals have been accomplished by the wildfire?
- Is the wildfire having any beneficial effects on the ecosystem?
- Is the suppression strategy and tactics based on direct attack or indirect attack?
- If indirect attack, how far away from the wildfire's perimeter edge are the firelines being constructed? What is the expected size of the wildfire going to be given the location of indirect firelines?
- Were suppressions actions taken in designated wilderness or inventoried roadless areas? If so, why?
- Are minimum impact suppression tactics being used? If so, where?
- Did the Wildland Fire Situation Analysis (WFSA) examine alternative management scenarios for the fire? What were the predicted sizes and costs of the wildfire in these alternatives? What was the decision maker's rationale for the selected alternative?

Post-Fire Rehabilitation

After a wildfire is contained and controlled, post-fire rehabilitation actions begin using money from emergency suppression funds to pay for mitigating the damage caused by suppression. The more damage that is caused by firefighting, the more funding the agency receives for rehabilitation projects.

Critical questions to ask:

- What kinds of impacts and damage was caused by fire suppression activities?
- Is there a rehab plan for the area affected by the fire?
- Does it include firelines, helispots and camp areas?

- Is the agency using certified "weed free" straw and native grass seed for slope stabilization efforts?
- Are there suppression damages that cannot be fully rehabilitated?

Asking the above critical questions of government fire officials and spokespersons will help reporters get the *whole* story.

SECTION V

Fire Watch: Monitoring Wildfires on the Web

Not so long ago, reporters were entirely dependent upon official government news releases, public affairs officers and fire information officers to get basic facts and status reports about active wildfires. If someone wanted statistical information, they needed to wait a year or two for federal agencies to compile and publish them. Nowadays, the Internet has revolutionized the process of gathering basic information and statistical data needed to monitor or perform trend analysis of wildfires. Reporters, fire managers and researchers, forest conservation activists and other interested citizens can gain access to a vast storehouse of information at the click of a 'mouse.'

The many informational resources available on the Internet makes the job of monitoring and reporting on specific wildfires much easier and less time-consuming than ever before. This better informs journalists, and frees up more time to go beyond the typical "box scores" or "body count" approach to conventional wildfire reporting (i.e. merely stating the number of "acres burned" or "structures lost") to ask more probing, deeper questions about wildfire incidents.

With the information available from the Internet, journalists can ask fire managers and agency officials critical, hard-hitting questions about the strategy, tactics, economic costs and environmental effects of wildfire suppression operations (see Section IV), and get the whole story. With the time-saving ability to get the basic facts from the Web, journalists can also pursue alternative voices besides official spokespersons (see Section II), and still meet tight deadlines. These kind of deeper questions and alternative voices not only help "cover" a story with more depth and diversity (a.k.a. "objectivity"), but also uncovers the real issues demanding a more critical examination by policymakers and the public at large.

Statistics on wildfire suppression incidents, Wildland Fire Use and prescribed fires, and other fire-related information are updated daily (sometimes several times per day). Depending on the selected Website, information can be organized according to national, state, regional, National Forest/National Park/Resource Areas or even specific wildfire incidents.

Historical and analytical data are also available, enabling instant comparisons between current wildfire activity and previous wildfire seasons. Brief narrative summaries of individual wildfire incidents that include information on fire behavior, suppression operations and the fire environment (fuels, weather and topography), can be found on various Websites, ready to 'cut and paste' with ease into a story.

Some Websites even offer searchable databases and multiple options for sorting the lists of specific wildfire incidents. Vivid, high-resolution photos of specific wildfires are also available, along with maps that can be manipulated to adjust the scale or select from multiple GIS data layers to create customized maps.

The following section offers brief overviews of the most popular and useful wildfire information sources available on the Internet. A more complete listing of information available and Internet sources has been put into a table at the end of this chapter. For maximum convenience, this table has been reproduced with relevant hyperlinks included (enabling reporters to link directly to a specific Webpage for a specific datum), and made available in the "Newsroom" section of the FUSEE Website www.fusee.org. Different Websites offer different kinds and qualities of information. Reporters should also utilize the list of Internet links in the "Hot Links" section of the FUSEE Website—this is one of the most comprehensive lists of fire-related Websites available on the Internet.

The following review of Websites is presented in order of the author's preference bearing in mind the needs of busy, time-crunched journalists. The review begins with the most useful, generalized and user-friendly sites, and ends with more specialized Websites that offer highly detailed information designed for use by fire managers and researchers that may require more 'clicking' on links to get the needed information.

1) *Inciweb* (USFS)

http://www.inciweb.org/

Inciweb is a searchable database that presents basic information on the incident names, locations, size and status of wildfires. It was designed to be a standard reporting tool for agency public affairs personnel to inform the public about active wildland fires. It offers concise 'one-pagers' that are rich with basic factual and descriptive information about specific wildland fire incidents.

Information is presented in a table that can be searched according to:

- Name of fire incident;
- Agency/land management unit of fire;
- State where the fire is located;
- Percentage of containment for each fire;
- Fire size in acres; and
- Date of latest information update.

Also, each column heading can be ordered alphabetically by clicking on the header.

Key assets of *Inciweb* are that it provides searchable database functions, so that information on nearly every wildland fire incident of any size or kind can be found. There are multiple options for creating searches and organizing lists of wildfire incidents.

General searches can also be filtered according to:

- Location by state;
- Minimum fire size (ranges from one to 50,000 acres, with a default setting of 50 acres);
- Maximum fire age (ranges from 30 to 365 days, with a default setting of 90 days); and

- Maximum fire containment (ranges from 10 percent to 100 percent, with a default setting of 100 percent).

The most recent news releases from all incidents across the country are presented in a right sidebar. These appear randomly prioritized according to the most recent update received. News releases for a specific fire incident can be found by clicking on the name of that fire and going to its specific Webpage. Links to news releases, as well as announcements, pictures and maps for a given fire are found in a header under the title bar for each page. Announcements and news releases may offer information on fire operations and significant fire events that may be useful in news stories.

One of the best features of *Inciweb* is that each Webpage offers contact information for the persons and agency offices to call for more information. This is located in the upper-right corner of a sidebar on each wildfire incident's specific Webpage.

Below this contact information is a small Google Earth photo image of the general fire area that can be manipulated with your 'mouse' to shift to new locations, and zoom in or out the image scale.

If you 'click' on a specific fire incident, the following information will appear:
- Date of latest information update;
- Map of the fire perimeter with links to view additional maps and photos;
- Land management unit handling fire information;
- Contact person and phone number for more information;
- Archive of recent news releases;
- Links to related Websites offering general wildfire information;
- List of other agency cooperators managing that specific wildfire; and
- Brief description of the wildfire organized into the sections delineated below:

Summary offers a one-paragraph description that presents:
- General fire location;
- Recent "newsworthy" events, for example:
    - firefighting operations,
    - fire spread,
    - weather conditions, and
    - affected communities.

Basic Information includes:
- Incident type (e.g. wildland fire, Wildland Fire Use);
- Cause of fire;
- Date and time of fire origin;
- Fire location; and
- Incident Commander

Current Situation presents:

- Total personnel (number of firefighters and support employees working on the fire);
- Fire size (acres within fire perimeter);
- Percent of fire contained;
- Estimated containment date;
- Fuels involved (e.g. tree species, brush, grass, etc.);
- Fire behavior (brief narrative description); and
- Significant events (e.g. changes in management, growth and behavior of fire, evacuations, closures, etcetera).

Outlook offers a preview of future actions and environmental conditions including:

- Planned actions (e.g. firefighting operations);
- Projected movement (predicted fire spread based on weather forecasts);
- Growth potential (using low to high scales);
- Terrain difficulty (description base on slope gradients and topographic features); and
- Remarks (miscellaneous comments about future management actions).

Weather provides data on current wind conditions, Temperatures and Humidities.

Along a horizontal links bar at the top of each incident Webpage, there are buttons for:

- **Announcements**: Short official notices of such things as roads and forest closures, changes in contact personnel or phone numbers, trail and campground closures and fire restrictions.
- **News**: Miscellaneous new dispatches and previous updates that offer short synopses of the wildfire incident on that given date. Also presented are suppression objectives and actions at specific locations of the wildfire perimeter—excellent tools for monitoring suppression operations!
- **Pictures**: Galleries of photos of the specific wildfire incident and firefighters in action are available, usually with photo credits included. All pictures are government property and as such should be available to all under "fair use" guidelines.
- **Maps**: Fire perimeter maps.

In sum, *Inciweb* is the most useful and user-friendly Website providing most of the information needed by journalists and citizens to monitor wildfire incidents. Some kinds of data and information are not available on *Inciweb*, but are available or are presented in more detail on other Websites (see Table 1 for more information).

Inciweb is overall the most superior of all wildfire monitoring Websites. One word of caution: Because of its popularity and high use—there were more than five million hits per day on the site in July 2007—the server capacity can sometimes be overwhelmed and it may be difficult to connect with this site. Don't be caught trying to log onto *Inciweb* at the middle of the afternoon with a story deadline minutes away! Fortunately, there are other Websites that offer similar information needed to monitor and report on wildfire incidents. These are described below.

2) *Incident Management Situation Report* (NIFC)

http://www.nifc.gov/nicc/sitreprt.pdf

The *Incident Management Situation Report* (a.k.a. the "*Sit Report*") is produced by the National Interagency Fire Center (NIFC) and is updated daily. The *Sit Report* offers the most convenient 'grab and run' format for getting current statistical data and brief (extremely brief!) descriptions of specific wildfire incidents. By 'clicking' on the link to the *Sit Report* (see Table 1 for a list of Websites offering this link), a pdf file will be downloaded in a format suitable for printing. The *Sit Report* can be a dozen or more pages in length. During peak periods of wildfire activity, information changes daily. Alternately, much of the information can be repeated from day-to-day during inactive parts of the year or in regions with low or no active wildfire activity.

At the top of the page the *Sit Report* provides the date and time it was produced, and the Preparedness Level (on a scale from one to five, with Level Five representing the highest level of wildfire activity or utilization of national suppression resources). The *Sit Report* presents the following fire information:

National Fire Activity presents quantitative data on the number of:

- Initial attack activity;
- New large fires;
- Large fires contained;
- Uncontained large fires;
- Area Command Teams committed;
- NIMOs committed (National Incident Management Organizations);
- Type 1 IMTs committed (Incident Management Teams);
- Type 2 IMTs committed; and
- Fire Use Teams committed.

Regional summaries offer quantitative data on the number of:

- New fires;
- New large fires;
- Uncontained large fires;

- Area Command Teams committed;
- Type 1 IMTs (Incident Management Teams, a.k.a. the "fire bosses") committed;
- Type 2 IMTs committed; and
- Fire Use Teams committed.

The *Sit Report* then provides more detailed wildfire information organized according to the 11 Regions. Those Regions having the highest fire preparedness level or wildfire activity listed at the top of the list, and those Regions with the lowest levels down at the bottom. Regions with no wildfire activity are not listed at all.

In each Regional section is a list of all wildfire incidents located within that Region, and a one-sentence description of the fire's location, fuel type and fire behavior. Unfortunately, the order of wildfire incidents is not alphabetized, and thus requires some 'scrolling' to find a specific fire. Below this list of one-sentence summaries is a detailed table of statistics for each of these wildfire incidents. This table presents:

- Incident name;
- State, and land management unit where the wildfire is located;
- Size (in acres), and size change within the last 24 hours;
- Percentage of containment, and estimated date of full containment;
- Total number of personnel working on the fire, and personnel change within last 24 hours;
- Number of firefighting crews, engines and helicopters working on the fire;
- Number of structures lost (destroyed by fire);
- Costs to date (in US dollars) for suppression activities; and
- Land owner where the wildfire originated.

Below all of the Regional summaries is another table that presents the number of *Fires and Acres Yesterday*, which are new fires, organized according to the eleven Regions and the five federal land management agencies (BIA, BLM, FWS, NPS and USFS) plus a column for "State/Other." This provides a snapshot of where new wildfire activity is occurring, with new incidents to monitor.

The next table offers the number of total fires and total fire acres for the year-to-date, organized with the same format as above. This provides a snapshot of the regions and agencies where most of the wildfire activity has been occurring. At the time of this writing (8/24/07) some interesting figures quickly leap out:

- In the Alaska Region, 430 fires burned across 266,932 acres, yet these fires received little to no major newsmedia coverage in the lower 48 States;
- In the Eastern Great Basin Region, 1,873 fires have caused more than 2,000,000 acres to burn, and have created an atmosphere of crisis in the national newsmedia;

- The land ownership with the most acres burned (2.2 million) are state/private lands. The Forest Service has the next highest number of acres burned (2.0 million), yet gets far more news coverage—and resultant attention by policymakers in Washington D.C.

For easy comparison, immediately below this table are the figures for the 10-year average number of fires and acres burned for that specific date.

To emphasize the expansion of fire management beyond wildfire suppression actions, tables for prescribed fires and Wildland Fire Use (WFU) fires are presented in similar formats:

- New prescribed fires and acres yesterday;
- Prescribed fires and acres year-to-date; and
- WFU fires and acres year-to-date.

A quick view of these tables reveals that:

- During the peak of wildfire season in the West, prescribed burning almost completely stops in all regions, including those with low wildfire hazard (there was just one 30-acre prescribed fire ignited in the whole country on August 24!);
- In the Alaska Region, just four prescribed fires burned more than 20,000 acres, and 56 WFU fires burned more than 128,000 acres;
- In the Western Great Basin Region, only 17 prescribed fires were ignited, burning just 4,875 acres; and
- The Southern Region ignited 16,221 prescribed fires, burning a whopping 2.5 million acres!

Interestingly, the final table presented on the *Sit Report* is a table of Canadian wildfires, organized according to specific provinces, and fire sizes are presented in terms of hectares instead of acres.

In sum, the daily *Sit Report* offers a convenient "one-stop-shop" for basic statistics about wildfire incidents and wildfire activity, offering data in a format that enables quick comparisons among different regions and land management agencies.

3) *Fire News* (NPS)

http://www.nps.gov/fire/public/publicandmedia.cfm

Fire News is a section of the National Park Service's (NPS) Fire and Aviation Management Website. The homepage is full of links providing information on the agency's general fire management program, and fire education materials geared to students, teachers and researchers. As its name implies, the material provided is specifically designed to meet the needs of journalists and the general public for information on specific wildland fire incidents. In accordance with the Park Service's view that fire information should also provide *education,* there are several links to Webpages that offer basic education about wildland fire ecology and management.

One attractive feature that distinguishes this website from all others is the prominence of WFU fires. First, the NPS tends to manage more wildland fire incidents as WFU fires compared to other federal fire agencies, but also, the NPS makes it a priority to educate and build support among the public for the WFU program. Another attractive, distinguishing feature is that this Website provides rich, descriptive narrative accounts of fire incidents along with detailed operational information on strategy and tactics.

This Website offers seven main sections accessible on a horizontal links bar at the top of the main page:

The **Fire Program** section presents a wealth of basic educational information, policy documents and manual directives on the following topics:

- Wildland fire;
- Structural fire;
- Aviation;
- National Fire Plan;
- Ecology;
- Prescribed Fire; and
- Burned Area Emergency Rehabilitation (BAER).

Journalists writing magazine articles for broad audiences may wish to visit these pages because they provide basic definitions and examples of key fire management activities.

The **Education** section provides Webpages specifically geared to:

- Students (gives general fire ecology and management information, including a page on “Fire Facts”);
- Teachers (provides a more extensive and detailed section on “Fire Facts” along with curriculum guides and lesson plans for teaching about fire ecology and management); and
- Researchers (presents a variety of links to fire research sites, including a Webpage providing a comprehensive history of fire management in the National Park Service).

The **Public and Media** section offers the most tangible information for journalists and other citizen monitors of active wildland fire incidents. This section is divided into subsections on:

Fire News provides a searchable database of specific wildland fire incidents, divided into active fires and archived (i.e. contained/inactive) fires. Searches for individual fire incidents can be sorted according to

- Park name (listed alphabetically);
- Last update (the default setting, with most recent updates at the top of the list);
- Fire start date (the most recent ignitions are listed at the top of the list);
- Title (name of the fire incident); and
- State (listed alphabetically).

The list of Active Fires sorted by Title, for example, gives the following information about individual fire incidents:

- Fire name;
- National Park unit the fire is located;
- Start date the fire was ignited or first detected; and
- Date of last information or status update.

By 'clicking' on the "**More**" button beneath each incident name, the following information on the incident status is provided:

- Cause of the fire's origin (i.e. natural/lightning versus human);
- Location of fire (related to nearest town or city);
- Acreage burned;
- Updates on fire (providing a brief but rich narrative of the fire, including information on fire behavior, weather, predicted size and direction of fire spread, announcements of road or trail closures, social or ecological benefits of the fire);
- Overview (an even more brief synopsis suitable for a "news brief" type of account);
- Last 24-hour activity (one sentence description of fire behavior and fire spread);
- Strategy (basic goals and objectives of fire management actions);
- Vegetation affected (dominant species in the fire area);
- Air/Smoke issues (notices of excessive smoke emissions);
- Benefits of the burn (usually general statements about fire ecology and the necessary role of fire in maintaining natural ecosystems in National Park units);
- Values to be protected (structures or other natural asset, if any, potentially threatened by fire spread); and
- Contact information (name, phone number and e-mail address of Park Service employee responsible for answering questions from news media about specific fire incidents).

The list of **Archived Fires** provides the same format and kinds of information as active fires, and provides information on incidents going back to 2003. On some fires, additional

information on resources committed (number of firefighters) and partners Involved (other federal, state or local agencies that helped manage the fire) is also provided.

Publications and Articles offers a wide variety of references to books, magazines and other publications about fire ecology and management. Of particular value are links to the full articles written by Jack Cohen about the causes of home wildfire ignitions.

Fire Stories contains short essays written by fire managers and public affairs officers that highlight "success stories" in managing wildland fire in the National Parks. These stories help fulfill the NPS' mission in fire education, and support the National Fire Plan. Detailed descriptions about specific fire management programs and projects (e.g. prescribed burns, fire monitoring assessments, personnel changes and special funding programs) are presented.

These fire stories present examples of successful NPS management activities and are quite valuable in providing information about the breadth of fire management activities, especially proactive projects to restore fire-adapted ecosystems. Another asset of this section of the NPS Website is that each story offers the name and contact information of the fire education specialists in each given national park unit.

Photo Galleries offers several slideshows containing up to 10 images each, organized around a specific theme (e.g. firecrew workers in the field, fire at night, NPS engines and fire vehicles, etc.) along with the winners of NPS Fire Photo contests. The images are all excellent, but fairly small (averaging 380 pixels in width by 260 pixels in height, and ranging from 25 to 100 kilobytes), so their use in print media might be limited. However, these photos can be used by everyone as "fair use," with credit given to the NPS.

The last two sections of the NPS Website, **Development Opportunities** and **Employment** are for current or aspiring employees in NPS fire management, and thus are of minimal interest to journalists or citizen monitors.

In sum, the NPS Fire and Aviation Management Website offers lots of valuable information focusing on fire management programs, projects and incidents in the National Parks. This Website is superior to all others in providing detailed descriptions about operational strategies and tactics on specific incidents, informing the public about the breadth of fire management activities beyond wildfire suppression, and going beyond "fire information" in a narrow sense to providing fire education materials suitable for diverse audiences.

4) *National Fire News* (NIFC)

http://www.nifc.gov/fire_info/nfn.htm

NIFC's Webpage, *National Fire News*, updated daily, provides another short summary of wildfire activity that focuses on suppression objectives and weather conditions. It presents a table of *Daily Statistics* on:

- Number of new large fires;
- Number of active large fires;
- Acres from active fires;
- Number of WFU fires;
- Number of WFU acres;
- Fires contained on (previous date); and
- Year-to-date large fires contained.

Some historical statistics are presented, too. A table of *Year-to-Date Statistics* gives the numbers of fires and acres burned for the current and previous six years (2000-2007), as well as the numbers for the *Five-year Average* and *Ten-year Average*.

Below these tables, this site presents the number of current active fires, new fires, contained fires and WFU fires, along with one-sentence summaries of specific fire incidents. The list is organized alphabetically by state.

Interestingly, the *National Fire News* offers summary statements that are very similar but not entirely identical to the summaries offered in daily *Sit Reports*. While a *Sit Report* offers the name of the Incident Command Team (ICT) assigned to the specific wildfire and brief comments on fire behavior, it does not disclose the size, percent contained or fuels involved. This information is provided on the *National Fire News* Website, but the ICT's are not disclosed. The *National Fire News* offers slightly more detailed descriptions of fire behavior, and unlike the *Sit Report*, the *National Fire News* includes phone numbers and Website links to contact for more information on each of its incident summaries.

Inexplicably, though, significant differences in information, such as the location of specific wildfire incidents, appear between the two Websites even though they are both managed by the same agency and, it is assumed, utilize the same data sources.

For example, on August 27, 2007, the *National Fire News* summary reported the following summary of the Castle Rock Fire in Idaho:

> *"Castle Rock (Sawtooth National Forest): 41,091 acres at 31 percent contained. This fire is eight miles west of Ketchum. Active fire behavior with uphill crown runs and long-range spotting were reported. The community of Ketchum, Bald Mountain Ski Area and a communication site are threatened and evacuations are in effect."*

The *Sit Report* on the same day reported the following:

> *"Castle Rock, Sawtooth NF. IMT 1 (Pincha-Tulley). Three miles west of Ketchum, ID. Timber, heavy dead and down fuels, logging slash, brush and grass. Wind-driven uphill and crown runs with long-range spotting. Community of Ketchum, Bald Mountain Ski Area and communication site threatened. Evacuations in effect."*

The differences in this one example should caution journalists and other wildfire monitors on the need to follow up with assigned incident contact persons to get all the facts straight.

Below the state, the list of large wildfire incidents, a *Wildland Fire Toolbox* lists several helpful links to other valuable fire-related Websites:

- National Incident Management Situation Reports;
- Wildland fire maps;
- Wildland fire statistics;
- Wildland fire glossary;
- Wildland fire outlooks;
- National fire weather forecasts;
- Traffic and road closure information;
- Geographic Area Coordination Centers (GACCs);
- National Interagency Coordination Center;
- FireWise (a homeowner wildfire preparation program);
- How to make your home safer from wildland fires;
- Firefighter crews status reports;
- California Department of Forestry and Fire Protection Website; and
- Florida Division of Forestry Website.

In sum, the *National Fire News* offers an easy-to-read snapshot of large wildfire activity across the nation, conveniently organized by state, and offers quick comparisons with previous fire seasons. Contact persons and phone numbers are listed alongside each (but not all) wildfire incidents. One particularly attractive feature of this Website is that WFU fires are prominently featured along with suppression fires in the list of incidents. This serves a valuable service in raising the public profile of this important fire management program.

5) *National Incident Information Center* (USFS)

http://www.fs.fed.us/news/fire/index.shtml

The Forest Service's *National Incident Information Center* (NIIC) collects, analyzes and disseminates information on large fires that occur anywhere across the nation. Technical fire information is summarized for brevity and ease of understanding by non-technical users. The Morning Report is the main document containing this information, and offers useful summary information and analysis in an attractive format easily accessible by journalists.

On NICC's homepage there is a table in the upper right-hand corner that presents current statistics on:

- States most affected today (defined by number of fires or acres burning);
- Number of fires to date (total fires nationwide);
- Number of fires greater than 500 acres;
- Acres burned to date (total acres within fire perimeters, nationwide);
- Resources committed today (number of firefighting personnel); and
- Structures destroyed to date (number of buildings).

The national Preparedness Level (defined by large wildfire activity, commitment of firefighting crews and equipment and long-term fire weather conditions) is presented. From the homepage there are links to:

Morning Report is the main asset of NICC's Website. [See part six of this Section for more detailed description of the information available in the *Morning Report*.]

Current Fire Map shows the location of large fires. A high-resolution PDF version can be downloaded and printed. Incidents are numbered on the map, and the names of each incident is displayed in a key at the bottom of the map. Links to maps offered on the GEOMAC and Remote Sensing Applications Center (RMAC) are available, too.

Acres Burned 07 displays a graph that plots the acres burned to date, and compares the current season with the years from 2000 to 2006, starting in May and ending in October of each year. This allows a quick visual comparison of wildfire activity across these years of higher than average number of fires and acres burned.

Useful Resources provides some links to other Websites that may be of interest:

- ***Healthy Forests and Rangelands*** *(a portal to numerous documents and reports on the National Fire Plan and Healthy Forests Initiative);*
- ***NIFC*** (links to its homepage); and
- ***Other Useful Links*** *(*offers the Websites and main phone numbers of federal land management agencies).

In sum, the NICC Website, and especially its *Morning Report,* presents useful statistical information on large wildfires organized and analyzed on a national and regional scale. It is an attractive, easy-to-read format, and its tables compare current wildfire activity with previous fire seasons and the 10-year average.

6) *The Morning Report* (NICC)

http://www.fs.fed.us/news/fire/mreport.shtml

The *Morning Report* is produced daily during wildfire season and provides information on the current wildland fire situation, regional fire summaries, weather reports, burned area rehabilitation activities and closure orders for large fires (500 acres and larger). The *Morning Report* is a kind of "Cliff Notes" version of the daily *Sit Report* with an attractive format that is easy to read. It can be viewed as a Webpage or downloaded and printed as a pdf document, and you can subscribe to receive the *Morning Report* every day via e-mail. Sections of the *Morning Report* include:

- Current Situation: A one-paragraph summary of wildfire activity. Includes new fires starts, ongoing large fires, regional weather forecast in the area of peak wildfire activity and the number of overhead teams assigned to fires.
- Incident Headlines: One-sentence summaries of the wildfire incidents, divided into the main regions, with newsworthy events such as rapid fire growth, evacuations and closures and number of structures threatened.

Summary of Fire Activity across the U.S. presents tables that compare the number of fires and acres burned according to:

- Yesterday;
- Year-to-date;
- 2006 fire season;
- 2000 fire season; and
- 10-year average.

Resources Committed presents a table on the number of:

- Firefighting crews;
- Engines;
- Helicopters assigned;
- Overhead personnel;
- Airtankers assigned;
- Total personnel (nationwide across all fires and agencies); and
- Personnel change within the last 24 hours.

There are links to three important maps:

- Fire Danger (by NIFC);
- Current Fires Over 500 Acres (by NICC); and
- Monthly Fire Outlook (by NIFC).

The *Morning Report* reproduces the same tables of large wildfires and single-sentence descriptions of specific wildfire incidents, organized according to region, that are produced in the daily *Sit Report*, so much of its information may be redundant. Finally, names and numbers of contact persons located in the Forest Service's headquarters (the Washington

Office) are offered. Note: Reporters must carefully pay attention to time zone differences when contacting the Eastern offices about Western wildfires.

7) *Fire Information-Wildland Fire Statistics* (NIFC)

http://www.nifc.gov/fire_info/fire_stats.htm

This Website provides a number of statistical reports that may be useful when analyzing current or historical wildfire seasons. In particular, the following links provide reports and historical fire information:

- Historically significant wildland fires (some of the most significant fires in U.S. history);
- 1997-2006 large fires (100,000+ acres);
- Lightning versus human caused fires and acres (statistics reported from 2001-2006);
- Prescribed fires (1998-2006);
- Wildland fires and acres (1960-2006);
- WFU fires (1998-2006);
- Historical Wildland Fire Summaries (Individual years 1997-2006); and
- Year-to-date fires and acres by state (includes wildfires, prescribed fires and WFU fires).

There is also a link to an official glossary of wildland fire management terms.

8) *Historical Incident ICS-209 Reports*

http://famweb.nwcg.gov/hist_209/report_list_209

The *ICS-209 Reports* ("209 Reports") are prepared by Incident Command Teams and offer summaries of wildfire suppression incidents. For journalists and other citizens interested in operational matters about suppression strategies and tactics, the *209 Reports* are the next best thing to getting access to the Incident Action Plans (a.k.a. "shift plans") that provide the daily/nightly "marching orders" for firefighting crews working on a fire. Unfortunately, current-year 209s are not available unless you are a select federal employee with authorized access to a password-protected Website.

The ability to access historical *209 Reports* on the Internet is a wonderful new service. Formerly, a researcher would have had to submit a Freedom on Information Act (FOIA) request to get these and other suppression records.

Records are only available from 2002 to 2006, and only cover "Significant" incidents (e.g. large wildfires more than 100 acres in size or incidents requiring lots of resources and Type I and II overhead teams). Once you log onto the homepage, 'click' on the scroll bar of a specific year and select a specific region, then click on the **ICS-209 Forms by GACC** button. Each daily *209 Report* will then appear, and you can select the report for the dates you are interested in reviewing.

Another option is to download the **Cheetah Report** that provides an overview table of statistics for every day of a specific incident. The Cheetah Program Input Data Table will provide the data for:

- Report date and time;
- Incident name;
- IMT Type (I, II, III or IV);
- State-Unit (location of the wildfire);
- Size/Area involved (a.k.a. "acres burned");
- Percent contained or maximum manageable area;
- Crews (Type I, II);
- Helicopters (Type I, II, III);
- Engines;
- Dozers;
- Water tenders;
- Overhead;
- Camp crews; and
- Total personnel.

Analysis of the Cheetah Report can reveal peak periods of firefighting activity when large numbers of suppression resources are working on the fire. This can help you target the dates for specific *209 Reports* to download and examine.

The *ICS-209 Report* goes beyond the basic statistical information provided on other Websites reviewed above—it provides brief but revealing descriptions about operational matters (e.g. suppression strategy and tactics). There are 46 kinds of information available on the 209 form, and space permits only a listing of the information available. (Asterisk * denotes key items of special interest in monitoring wildfires.)

The following kinds of information are available on the *ICS-209 Report*:

Name and Location

- Date and time of the report;
- Initial, update or final report (there can be up to three Reports prepared daily);
- Incident number (an agency code used to track the incident);
- Incident name;
- Incident kind (e.g. wildland fire);
- Start date and time/cause (origin of the fire);
- Incident commander / IMT Type (I, II, III);
- State-unit / county / latitude and longitude (location of the fire); and
- Short location description (refers to nearest town).

Current Situation

- Size / area involved (in acres);

- Percent contained or maximum manageable area;
- Expected containment date and time;
- *Line to build (miles of fireline yet to build in order to contain the fire);
- *Costs to date (in dollars);
- Declared controlled date and time (recorded when operations are over);
- *Injuries this reporting period / injuries to date / fatalities;
- Structure information: Type of structure (residence, commercial property, outbuilding/ other) / number threatened, damaged or destroyed;
- Threat to human life/safety (e.g. evacuations in progress or imminent);
- Communities/critical infrastructure threatened (in 12, 24, 48 and 72 hour time frames);
- Critical resource needs (suppression resources needed);
- *Major problems and concerns (control problems, social/political/economic concerns or impacts, etc.);
- *Resources threatened (kind(s) and value/significance);
- Current weather conditions;
- *Resource benefits/objectives (for prescribed/wildland fire use only);
- *Fuels/materials involved;
- *Today's observed fire behavior; and
- *Significant events today (closures, evacuations, significant progress made, etc.).

Outlook

- Estimated control date and time;
- *Projected final size;
- *Estimated final cost;
- Tomorrow's forecasted weather;
- *Actions planned for next operational period;
- Projected incident movement/spread during next operational period;
- Resistance to control / growth potential / difficulty of terrain;
- Likelihood that containment/control targets will be met;
- Projected demobilization start date; and
- *Remarks.

Committed Resources

- Table showing all participating agencies, firefighting crews and equipment (similar to data offered on the Cheetah Report); and
- Cooperating and assisting agencies not listed above (normally local governments).

Analysis of the *209 Reports* will reveal some of the environmental or social challenges and "inner thoughts" of the fire managers that affected the final outcome. These reports are particularly helpful for focusing attention on some of the more costly or damaging suppression actions that can aid follow-up research of additional suppression records and the Burned Area Emergency Rehabilitation report.

WILDFIRE MONITORING TOPICS

KEY:
✔= data available 🔥 = superior info ☛ = links only

	Inciweb	Sit Report	NPS Fire News	National Fire News	NICC Homepage	Morning Report	Fire Statistics	ICS-209 Reports
CONTACT INFO								
Fire incident information	🔥		🔥	✔				
Firefighter crew contacts				✔	🔥			
STATUS UPDATES								
National Incident Management Situation Report		☛		☛	☛			
State/Regional updates		✔			☛			
News Releases	✔							
Date/time of latest information update	🔥	✔	✔	✔		✔		✔
Searchable database function	🔥		✔					
National Fire Preparedness Level (scale: 1-5)		✔		✔	☛	✔		
Number of new fire starts		✔		✔	☛			
Firefighter crew status reports				✔	☛			
SPECIFIC FIRES INCIDENT INFO								
Names (Incident/Complex)	✔	✔	✔	✔	☛	✔	✔	✔
Location (State/Region/Agency Management Unit)	✔	✔	✔	✔	☛	✔	✔	✔
Management (Lead Agency/Incident Command Team)	✔	✔	✔	✔	☛	✔		✔
Size (total acres within fire perimeter)	✔	✔	✔	✔	☛	✔	✔	✔
Size (change within last 24 hours)		✔	✔		☛	✔		
Percent contained within firelines to date	✔	✔	✔	✔	☛	✔		✔
Estimated date of final containment/control	✔	✔	✔		☛	✔		✔
Cause of fire origin	✔		✔					✔
Date of fire origin	✔			✔	☛			✔
SUPPRESSION OPERATIONS								
Narrative descriptions of strategy and tactics	✔		🔥				✔	🔥
Significant events in operations	✔						✔	🔥
Fire Behavior								
Current/Predicted (e.g. rate and direction of spread)	✔		✔					🔥
Narrative descriptions (e.g. creeping, torching, etc.)	✔	✔		✔	☛			🔥
Fuels Involved								
Vegetation types (e.g. grass, brush, trees, etc.)	✔	✔	✔		🔥			🔥
Fuel Models (1-13)	✔				🔥			🔥
Weather								
Current data (temperature, winds, humidity, etc.)	✔			✔	🔥			✔
Weather forecasts	✔			✔	🔥	✔		✔
Significant events (e.g. fronts, lightning, storms)	✔							✔
Topography								
Slope gradient, elevation, special terrain features, etc.	✔							✔
Resources (i.e. Personnel/Equipment)								
Number of Firefighter crews and support personnel	✔	✔	✔		🔥	✔		🔥
Number of Engines/dozers/other heavy equipment	✔	✔	✔		🔥	✔		🔥
Number of helicopters and fixed-wing aircraft	✔	✔	✔		🔥	✔		🔥

	Inciweb	Sit Report	NPS Fire News	National Fire News	NICC Homepage	Morning Report	Fire Statistics	ICS-209 Reports
Number and kind of overhead teams		✔			🔥	✔		🔥
Personnel change within last 24 hours		✔			🔥	✔		
Suppression Costs								
Total suppression costs to date	✔	✔			🔥			✔
Total structures destroyed by wildfire	✔	✔			🔥	✔	✔	🔥
Values at risk	✔					✔		✔
STATISTICS								
Current number of fires								
Total wildfires		🔥		✔	🔥	✔		
Large fires (> 500 acres)		✔		✔	🔥	✔		
Uncontained/Active wildfires	✔	✔		✔	🔥	✔		
Contained fires	✔	✔		✔	🔥	✔		
Total Wildland Fire Use fires		🔥	✔		🔥			
Total prescribed fires		🔥			🔥			
Current number of acres (within perimeters)								
Total wildfire acres		🔥		✔	🔥			
Total Wildland Fire Use acres		🔥	✔		🔥			
Total prescribed fires acres		🔥	✔		🔥			
Historical Statistics								
Daily/Year-to-date statistics				✔	🔥		🔥	
Five-year/10-year average number of fires		✔		✔	🔥			
Five-year/10-year average number of acres burned		✔		✔	🔥			
Historical Fire Data/Fire Season Summaries					🔥		🔥	
MAPS								
Incident Action Plan maps (i.e. fire suppression maps)			🔥				✔	
Fire perimeter maps	🔥		✔		🔥		🔥	
Geographic Area Coordination Centers maps				✔	✔			
GoogleEarth maps/images	✔							
GeoMac spatial maps				✔	🔥			
Large fire maps				✔	🔥			
MODIS active fire maps				✔	🔥			
National Fire Weather Service forecast maps				✔	🔥			
National wildland fire outlook maps				✔	🔥			
NOAA satellite fire detection maps				✔	🔥			
PHOTOS								
Specific fire incidents	🔥		🔥					
General fire images	✔		✔					
ADDITIONAL INFO RESOURCES								
Links to other fire monitoring Websites	✔		✔		🔥			
Publications on fire science/management			✔		🔥			

SECTION VI

Burning Issues: Essential Fire Ecology Terms and Concepts

News stories that sensationalize wildfire events by hyping the danger of wildfires and the drama of firefighting efforts offer little or no scientific or policy context for readers. The goal of this section of *A Reporter's Guide to Wildland Fire* is to provide journalists with key fire ecology concepts and terms they can use to increase the accuracy of their reporting and to raise the educational value of their stories.

Fire Ecology

Fire Ecology refers to the relationship between living organisms, their physical environment and fire. Fire is a natural disturbance that functions as a ***biophysical stimulus*** that renews ecosystems and enhances diversity.

Fire Triangle and Fire Environment

The Fire Triangle refers to the combination of **heat, oxygen and fuel** that is necessary for something to ignite and sustain combustion. Remove any one of these legs of the triangle and a fire goes extinct. The **Fire Environment** involves the interaction between **weather, topography and fuels**. These all influence fire behavior and fire effects.

In general, fires burn more rapidly and intensely in/on:

- hot, dry, windy weather conditions;
- steep, south-facing slopes;
- dense flammable vegetation; and
- high amounts of small-diameter dead downed needles and limbs.

In general, fires burn more slowly and less intensely in/on:

- cool, moist weather conditions;
- flat terrain or gentle slopes;
- sparse or low-lying vegetation; and
- large-diameter trees and downed logs.

Change any one or more of the above factors and it can significantly change fire behavior and effects.

Fire Behavior and Fire Effects

Together, the fire triangle and fire environment influence fire behavior, which includes the **rate of spread** (measured in distance per unit time, e.g. feet per hour), the **fireline intensity** or heat output at the flame front (measured in BTUs or flame lengths), and various qualitative descriptors (e.g. smoldering, torching, running, etc.). **Fire Effects** are affected by fire behavior, and this examines the physical, biological and ecological impacts of fire on the environment, often measured in terms of **fire severity** (see below).

Fire Risk and Fire Hazard

These terms are often wrongly used interchangeably by journalists. There are qualitative differences that are important to distinguish. Fire risk is the **probability of an ignition** occurring by any source (e.g. human or lightning). Fire hazard refers to the **potential flammability** of a given fuel type.

In some cases, a dense tree stand may have a high fire hazard rating but may also have a relatively low fire risk because it is a high-elevation stand in a remote roadless area with a cool, moist environment. Thus, the fire hazard level may be high but may still be tolerable because the chance of an ignition is low. In other cases, a tree stand may have a high fire risk because it is located in a low-elevation roaded area with a hot, dry environment, but it might have a low hazard rating because fire has burned fairly frequently and kept flammable fuel loads to a minimum.

Fire Types: Ground, Surface and Crown

There are three main types of fire: **Ground, surface and crown**, although it is important to realize that on large fires all three kinds of fires may be evident.

Ground fires burn below the ground surface. They are very slow-moving fires that smolder underground in buried fuels, and in the case of peat bogs, can be extremely difficult to fully extinguish. The significance of ground fires is that these can be "sleeper fires" that may escape detection for several days following their ignition until they become an unexpected wildfire.

Surface fire is the most common type of fire. It burns dead fuels and live vegetation located above the ground, including dead needles and limbs, grasses, forbs, brush, tree saplings and poles, but does not include burning the overstory tree canopy layer. Surface fires can range from slow- to fast-moving and from low to high intensity. Firefighting efforts are successful when they can contain or "corral" surface fires within firelines, and then control all visible smokes within a few hundred feet within the perimeter.

Crown fire is the most popular image shown on television newscasts, yet it is the rarest type of fire. Crown fires are normally fast-spreading and high-intensity fires. They can begin by single-tree "torching" that spreads to adjacent stands. Crown fires can be dependent upon surface flames, or in the most extreme type of fire event, can move independent of flames on the ground. In the latter case, fire moves extremely rapidly through the canopy layer ahead of fires burning along the surface. Crown fires are the most severe kind of fire since they kill most or all of the trees they burn. They are also the fires that are near impossible to humanly contain and control until the fire drops back down to the ground and more favorable conditions permit containment. Crown fires are extremely dangerous to firefighters because they can ignite spotfires ahead of the main flame front, thereby entrapping firefighters between two fires.

Fire Intensity and Fire Severity

These terms are also often used interchangeably by journalists, but need to be distinguished and used appropriately.

Fire intensity refers to the amount of **heat output** per unit of time or fuel. Scientists measure intensity in terms of "BTUs," while managers measure intensity in terms of flame length. The concept of "fireline intensity" refers to the amount of heat emitted at the perimeter of a fire. Flame lengths of four feet or less can normally be approached directly by firefighters; flame lengths of four-to-eight feet require heavy equipment like bulldozers; flame lengths exceeding twelve feet tall cannot be directly confronted by firefighters and require "indirect attack" strategies that construct firelines at a considerable distance away from the wildfire's leading edge.

Fire severity refers to the **effects of a fire on forest soils and vegetation**. Scientists tend to measure the effects in terms of soil impacts, examining how much soil organic matter (e.g. litter and duff) was consumed based on how deep the heat penetrated into the soil. The more organic matter that is consumed or deeper the heat, the higher the severity of a fire. This has a bearing on the mortality of vegetation and the amount and kind of post-fire vegetation recovery. Managers, however, tend to measure severity in terms of mortality effects on dominant overstory vegetation, which can be trees, shrubs or grasses and forbs. The higher the percentage of dominant vegetation that is killed by fire, the higher the severity.

The distinction between the concepts of intensity and severity is important because in some cases a relatively high-intensity fire may result in low severity if it burns rapidly across the surface but the heat does not penetrate the soil or the flames do not reach the tree canopy layer. Alternately, a low-intensity slow-moving fire that smolders in deep duff layers or downed decayed logs may result in high severity effects on a localized level (e.g. directly beneath downed logs). When the heat resides in one place for a long time, it is able to penetrate deeper soil layers, and can kill large overstory trees by essentially "baking" their roots. In terms of assessing the ecological effects of fire, severity is the main issue to focus on, not size, spread or intensity.

Fire Management

Fire Management includes all agency activities to prevent, suppress or use fire in order to manage burnable wildland fuels. Fire management is fast becoming the most critical area of funding and focus of federal land management agencies as recent severe wildfire seasons have captured the attention of the public, policymakers and the press. Unfortunately, current fire management policies and practices are not based on fire ecology principles, as evidenced by the dominance of fire exclusion and fire suppression in federal fire management agencies.

Fire Regimes

Fire Regime is a concept that uses fire frequency and severity to provide a general description of the role that wildland fire plays in shaping and maintaining an ecosystem or vegetative community. There are five main historical fire regimes in the west:

- Fire Regime I: 0-35 year frequency/low-severity (e.g. old-growth ponderosa pine stands with grassy understories)
- Fire Regime II: 0-35 year frequency/stand-replacement severity (e.g. grasslands and shrublands)
- Fire Regime III: 35-100+ year frequency/mixed severity (e.g. mixed conifer stands)
- Fire Regime IV: 35-100+ year frequency/stand-replacement severity (e.g. coastal chaparral, boreal forests)
- Fire Regime V: 200+ year frequency/stand-replacement severity (e.g. coastal temperate rainforests)

Fire Return Interval

Fire Return Interval is related to fire frequency, and refers to the typical length of time between two successive natural fires in a given area. This can be expressed as an average/mean or a range of years. In general, fire return intervals have been lengthened in many areas because of fire exclusion and suppression policies. In short-interval fire regimes, this has resulted in wildfires of uncharacteristically greater size and severity because of the accumulation of fuels that would have normally been burned. However, in long-interval fire regimes, the period of effective fire suppression has not been sufficient

enough to significantly alter fire processes across the landscape, although specific sites that used to be burned by Native Americans (e.g. meadow communities in forests) may have been adversely affected by modern fire exclusion/suppression.

Fire-Adapted Species

Fire-Adapted Species refers to various characteristics that specific plants have developed through evolution in order to survive or thrive from fire events. Any single species may exhibit one or more special adaptations to fire. Dr. James Agee (1993, *Fire Ecology of Pacific Northwest Forests*. pgs.135-136) classifies five different kinds of plants with adaptations to fire:

- Invaders: These are the "pioneer" plants that seek to "colonize" sites where fire has removed the previous vegetation.
- Evaders: These plants have the ability to reseed from serotinous cones that open and release their seeds in the heat of a fire.
- Avoiders: These are shade-tolerant, late-successional plants that are generally killed by fire and do not return to burned areas for a long time.
- Resisters: These plants have adaptations like thick bark that enables them to survive most low-intensity fires.
- Endurers: These plants have the ability to resprout from live roots that survive most fires.

Presenting fundamental fire ecology terms and concepts provides some critical scientific context for readers to understand fire events in the "big picture." To reiterate, in most cases even the largest wildfire incidents are not ecological catastrophes (although they may be social disasters if they destroy many homes that were unprepared for wildland fire), but instead, are natural disturbances in which individual species and whole biological communities have evolved numerous adaptations to naturally recover from fire.

Providing fire ecology science in news stories in no way diminishes the natural drama of wildfires, but it offers a more complex analysis than simply labeling a fire as "catastrophic." More importantly, it increases the educational value of news reporting by raising the scientific and ecological literacy of news readers, viewers and listeners.

SECTION VII

All the Words Fit to Print: New Fire Management Terminology

Reporters don't need to strip their writing of the fiery language that makes for great stories, but they should not sacrifice accuracy in their pursuit of exciting prose. Many terms commonly used to report the "facts" are explicit pejoratives (e.g. the term, "catastrophic wildfire") that are often wildly inaccurate for describing the actual behavior and effects of specific fires. Moreover, these words have become politicized terms with not-so-subtle ideological intentions for promoting fire policies that favor existing bureaucratic institutions and economic interests.

Reporters are therefore urged to replace the common "loaded" terms with some of the neutral or new terms offered below.

Loaded Terms	Neutral Terms	New Terms
Wildfires	Forest/Brush/Grassland Fires	Wildland Fires
Catastrophic	Stand-Replacing	High-Severity
Natural Disaster	Natural Disturbance	Ecological Stimulus
Escaped/Out-of-Control	Uncontained/Uncontrolled	Unconfined
Fighting Fire	Suppressing Fire	Managing Fire
Let Burn	Wildland Fire Use	Monitored Fire
Backfire/Burnout	Firing Operation	Backburn
Fire Dangers	Fire Conditions	Fire Environment
Firestorm/Conflagration/ Superfire/Megafire	Mass Fire	Large-Scale Severe Fire
Controlled Burning	Prescribed Burning	Light-Burning

There is an official glossary of wildland fire management terms at http://www.nwcg.gov/pms/pubs/glossary/index.htm.

SECTION VIII
Conclusion

Using this *Reporter's Guide to Wildland Fire* will help reporters compose more accurate and complete news stories. This *Guide* has offered tips on new story frames and angles, interview questions, information and interview sources, fire ecology terms and concepts, new terminology and underreported issues ripe for alternative or investigative journalists to cover.

Undoubtedly, in the news industry there will still be pressures to rely on sensationalist hype to sell stories. But, FUSEE trusts that, as more enterprising journalists take advantage of the new tools provided in this *Guide*, the accuracy, quality and usefulness of stories concerning wildfire incidents will markedly improve. Hopefully, this will result in expanded coverage of the full spectrum of fire management activities.

Additional resources for journalists and other citizens interested in wildland fire ecology and management can be found at the FUSEE website.

Be sure to check out the Newsroom and the Hot Links sections of the website at www.fusee.org.

For the breaking news and analysis from the frontlines of fire management, visit the FUSEE Webblog at http://www.fusee.blogspot.com/.

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